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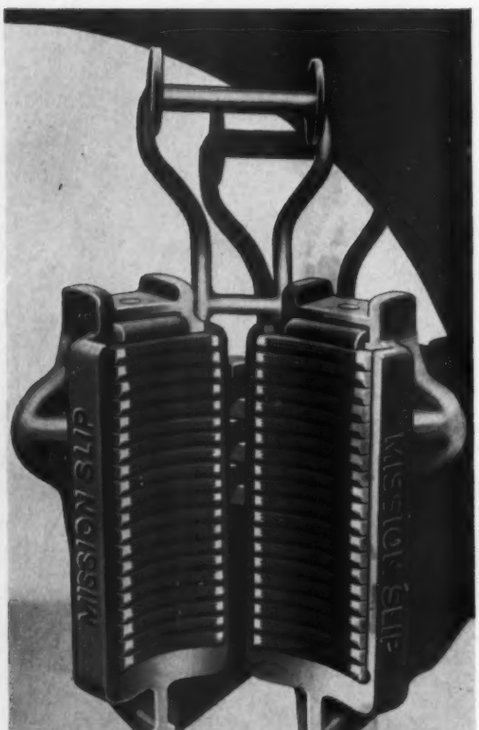

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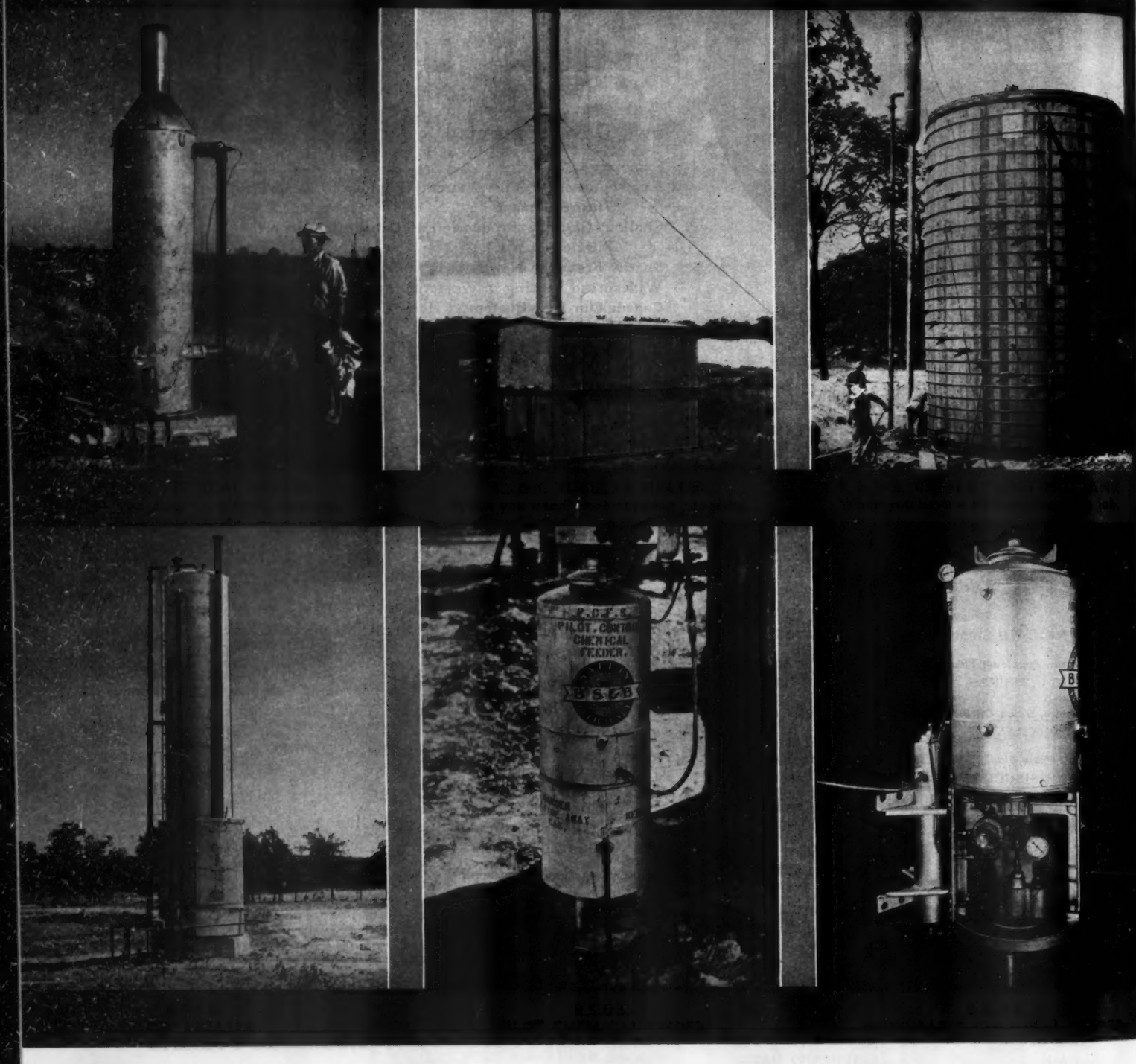

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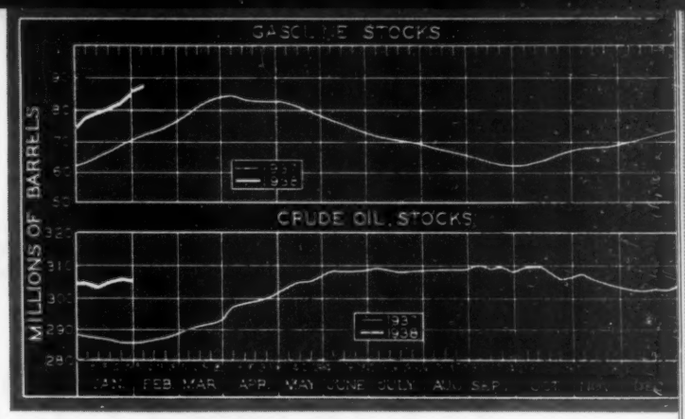


Operations Are Being Adjusted

THE effects of curtailments in refinery operations which got under way in late January were becoming apparent in the operations of all branches of the industry over the past week. Faced with the fact that gasoline stocks have been accumulating at too rapid a rate and that in many cases refiners will end the season with more fuel oil than is needed, plant owners are curtailing still runs. Several of the smaller plants will be shut down completely through February and possibly a longer period.

CRUDE PRODUCTION *3,313,376 barrels daily average—down 43,350 barrels.*

CRUDE STOCKS *304,286,000 barrels as of January 29—down 138,000 barrels.*

GASOLINE STOCKS *86,484,000 barrels as of February 5—up 1,640,000 barrels.*

REFINERY RUNS *3,155,000 barrels daily week ending February 5—down 15,000.*

This development has resulted in a slightly firmer market for gasoline, with indications this improvement will become more pronounced later in the month. If the curtailment continues it should also end any threat of collapse in the burner oil markets during the early spring period of decreasing consumption.

Analyses made in the several marketing areas indicate that a lower level is desirable in practically all phases of operations until present surpluses are absorbed. This includes lubricating oil plants, where prices have slumped in recent months below the cost of production.

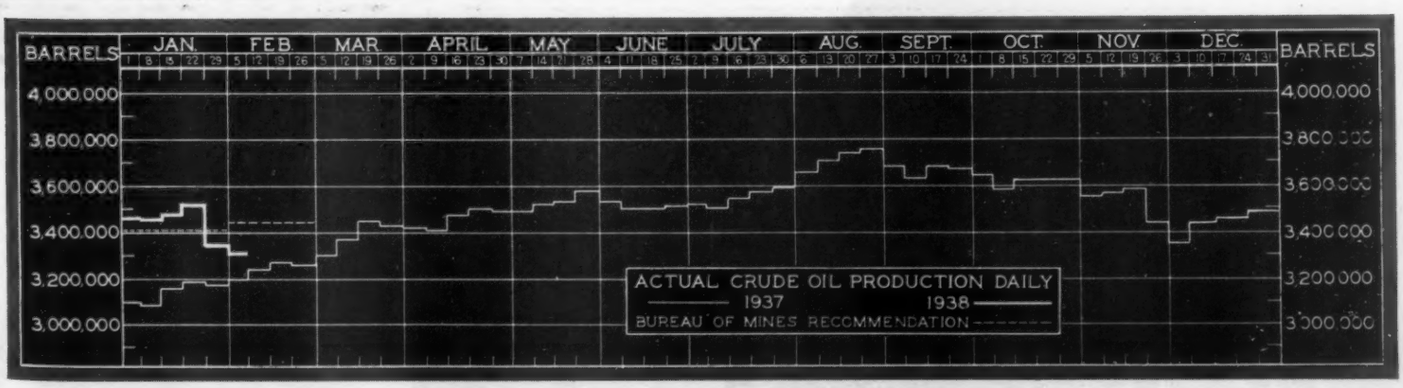
This refinery situation is also bringing adjustments in pipe line operations and crude production. Some of the major refiners increased their crude purchases in January following a year-end reduction in operations and it was expected this level of operation would continue through February. Over the past 10 days several of these refiners have reduced their crude requirements 10 or more per cent under January.

This has brought similar reductions in purchases of the larger crude buyers, as there is no disposition on their part to store the crude not wanted by their refinery connections. This accounts for the action of the Oklahoma Corporation Commission in reducing the state's allowable to 500,000 barrels retroactive to the first of the month. It also explains the threat of further curtailment in Texas notwithstanding the reductions already effected by the Sunday shutdown program. Conservation authorities of these two states appear willing to take any reasonable action necessary to prevent production of crude in excess of needs including the adjustments needed to offset the conditions brought about by overextended operations during the latter part of 1937 and January of this year. The cooperative attitude displayed by operators has been outstanding and encouraging to those who are hopeful that a satisfactory statistical situation for the entire industry can be attained before the start of the principal gasoline-consuming season.

Daily Average Production for Week

	Feb. 5 1938	Bur. Mines Feb. est.	Feb. state allowables	Jan. 29 1938
Oklahoma City	114,025			134,025
Fitts	69,850			69,025
Remainder of state	349,225			350,825
Total Oklahoma	533,100	569,700	535,000	553,875
East Texas	423,989			423,250
West Texas	176,548			175,598
North Central Texas	89,950			94,350
Texas Panhandle	55,550			74,200
East Central Texas	89,349			79,250
Gulf Coast Texas	288,600			297,000
Southwest Texas	94,599			94,150
Total Texas	1,218,585	1,365,700	1,200,000	1,237,798
North Louisiana	80,650			78,470
Gulf Coast Louisiana	177,350			176,200
Total Louisiana	258,000	239,400	244,700	254,670
California	727,000	693,700	693,700	725,250
Kansas	179,950	176,400	176,400	187,075
Arkansas	41,525	36,800		42,455
Eastern fields	133,150	130,000		133,200
Michigan	48,716	52,800		48,273
New Mexico	107,070	105,100	101,100	107,160
Rocky Mountain area	66,280	68,600		66,970
Total United States	3,313,376	3,438,200		3,356,726

Decrease, 43,350 bbls. daily.



Known Reserves Must Incr e to Keep Pace With Future I

By W. V. HOWARD

Consulting geologist, who read The Oil and Gas Journal's annual report on petroleum reserves in the January 27 issue and immediately got busy with a calculator. He found out among other things that the large gain in reserves last year did not keep pace with the increased demand. You will be interested in reading this and other features of his analysis.

The estimates of known crude-oil reserves compiled by the staff of The Oil and Gas Journal, and published in the January 27, 1938, issue, constitute a most valuable report. The figures are of particular value because the report, in listing the estimates by fields for 1937, with revisions for 1936 and 1935, shows the manner in which the totals were obtained.

There is danger, however, that the industry, considering the report merely from the standpoint of quantity gains in total reserves, may conclude that too much oil is being found with an inevitable disturbance in markets affecting present price levels. The situation is particularly important at this time with a temporary unsettlement in the market because of increased storage of petroleum products above ground.

One fact which must be considered is that we are producing our crude in greater quantities each year. This increase in the rate of production from known fields necessitates the finding of reserves in such quantity that we shall be able to produce oil to meet the increased demand as we need it. Often, the amount of fluid in a reservoir is of very much less importance than our ability to draw it out of that reservoir when we want it.

The figures presented by The Oil and Gas Journal as of January 1, 1937, showed an estimated total reserve of 12,501,839,546 bbls. Based on 1936 production, this amounted to 11.4 years' supply.

These figures were adjusted as of January 1, 1938, to 12,904,946.546 bbls., or 11.7 years' supply.

Discovery well of Union Oil Co. in Rio Bravo field, California, by light of torches

Reserves as of January 1, 1938, are estimated to be 13,489,457,944 bbls., and, based on 1937 production, this amounts to 10.7 years' supply.

In order to maintain reserves at the 1937 level based on present production, they would have to stand at 11.4 times present production, if it is assumed that the same adjustment will be made at the end of the year as was made this year. This figure would be 14,388,134,940 bbls., or 898,676,994 bbls. in excess of the present reserve.

This represents a required discovery rate almost 50 per cent in excess of last year's rate.

So long as withdrawals are increasing each year, required discovery rates are not merely equal to withdrawals but must be much greater. Unless reserves increase correspondingly with demand, it will some day be physically impossible to obtain the increased production required. At present, with the large amount of available flush production, this does not appear important. However, if we take a simple example, it is obvious that our discovery rate is too low to maintain the present ratio between reserves and withdrawals and that, even if we maintain discoveries at the same rate as withdrawals, there will come a time when it will be impossible to meet our requirements.

For ease in calculation let us assume that our reserves are equal to 10 years' supply and that the discovery rate always equals withdrawals. Let us assume further that demand increases at the rate of 10 per cent per year. Table 1 shows the relation between reserves and withdrawals.

It is, of course, true that production has increased only by 40 per cent during the past 10 years, but this included the depression period, and last year's increase was 16 per cent, which is above the assumed annual rate. Even at the rate of 40 per cent in 10 years, with withdrawals balancing discoveries, 10 years' supply would have dwindled to only 7.14 years' supply.

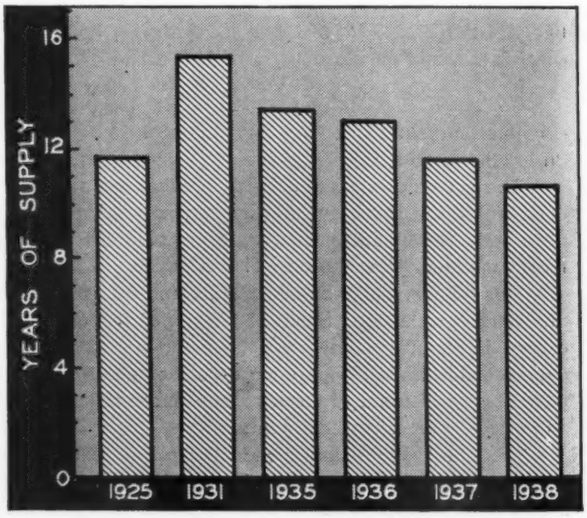
In order to maintain our position with respect to reserves, the rate of discovery must equal withdrawals plus the increase in withdrawals over the previous year times the number of years' production at the present rate less adjusted reserves in previously discovered fields. This may be expressed as follows:

$$D = P + IT - A$$

D = New oil discovered. P = Annual production.
I = Increase over previous year's production.

$$T = \frac{\text{Reserves}}{\text{Annual production}}$$

A = Adjustments in previously determined reserves.



Crude oil reserves in terms of years' supply

Assuming 11 years' supply to be about normal, the discovery rate since 1928 should have been as shown in Table 2.

From the above table it will be noted that total estimated discoveries since 1927 have been slightly in excess of requirements to maintain reserves at the 1928 level.

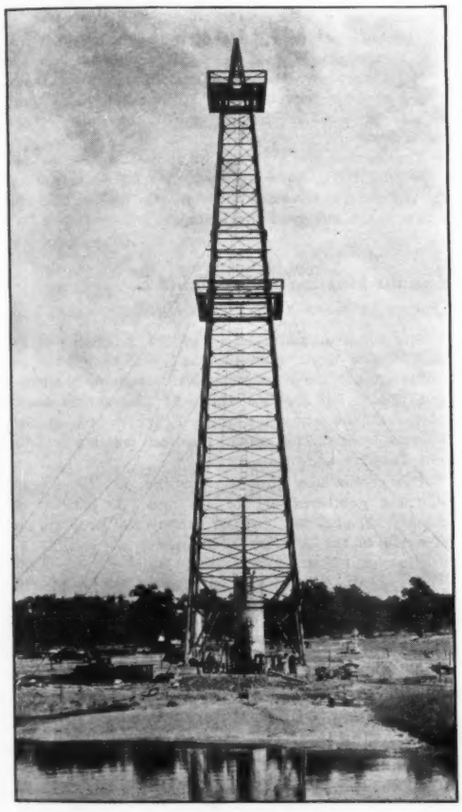
TABLE 1

Year—	Reserve	Withdrawals	Year's supply
1	1,000	100	10.00
2	1,000	110	9.19
3	1,000	121	8.26
4	1,000	133	7.52
5	1,000	146	6.84
6	1,000	161	6.21
7	1,000	177	5.65
8	1,000	195	5.12
9	1,000	214	4.67
10	1,000	236	4.23
11	1,000	259	3.86
12	1,000	285	3.51
13	1,000	314	3.18
14	1,000	345	2.90
15	1,000	380	2.63

ease Rapidly Demands

Night drilling in northwestern extension of Oklahoma City field.

Another interesting fact is that approximately 27 per cent of these discoveries were made in 1930 with a corresponding unsettlement of the price structure in that year and in 1931. The discoveries of 1931 and 1932 were in excess of requirements and prices remained low. From that time on, however, discoveries have been below requirements with corresponding strengthening of the price structure and now that total reserves are approaching the normal basis owing to the fact that discoveries are lagging behind requirements, prospects for maintaining or even increasing the price of crude appear good, provided that (1) discoveries do not raise the reserves beyond the present level; (2) refineries reduce their crude runs to the point where they can draw on storage in sufficient amount to settle the market on refined products, and (3) we do not face another depression with corresponding reduction in demand.



Fox pool well which started deep development in southern Oklahoma. It has produced 300,000 bbls. of high-gravity oil

H. J. Wasson estimated the reserves as of January 1, 1928, at 9,675,000,000 bbls., or about 10.7 years' supply based on 1927 production. Our present position is thus the same as in 1928.

Although demand during 1938 probably will not increase as rapidly as it did during 1937, a 5 to 10 per cent increase is not at all improbable. This would require that new reserves totaling between 2,438,417,540 and 3,196,887,804 bbls. must be found if we are to maintain 11 years' supply. Including adjustments of 403,107,000 bbls. added to previously known fields, we discovered an estimated 2,251,675,000 bbls. in 1937.

Wasson advanced the idea of estimating discoveries in terms of year's supply and showed that discovery rates resulted in a slow reduction of reserves in terms of years' supply from 10.4 years in 1919 to 9.5 years in 1925. A gradual increase to 10.8 years' supply in 1929 was followed by a jump to 12.9 years' supply in 1930 due to the discovery of East Texas and other large pools in that year. Since 1930 reserves have declined to an estimated 10.5 years' supply at the end of 1936. In his article Wasson assumes an annual increase of 3 per cent in demand, which accounts for the discrepancy between his figures and those given above. His estimate of reserves and of new discoveries also differs from those of The Oil and Gas Journal.

At present certain states are strictly prorated, whereas other states are producing almost to capacity. It is, therefore, of interest to note whether, under prevailing conditions, some states are depleting their reserves more rapidly than they are replenishing them. Accompanying Table 3 shows production during 1934 and 1937, the number of years' supply in reserve according to the A.P.I. estimate for January 1, 1935, and The Oil and Gas Journal's estimate for January 1, 1938. The fifth column shows the required discoveries if reserves in each state were to be maintained at the 1934 level based on years' supply. As 1934 was a year of low production, these figures are adjusted to 1937 levels in column 6.

Column 7 shows the actual discoveries according to The Oil and Gas Journal's estimate, and the final column shows the excess or deficiency of discoveries.

Table 3 gives results which may be confusing when compared with Table 2. It must be remembered that the former table was prepared on the basis of 11 years' supply, while Table 3 is on the basis of 10.7 years' supply (or the reserve which is now in existence).

Considering only Table 3, there are also some apparent inconsistencies. Each state must therefore be considered separately.

California has drawn very heavily on its reserves during the past three years, and as there have been relatively few discoveries, the reserves have declined almost 37 per cent. They are still above the average for the United States as a whole.

Although the years' supply in Wyoming in 1935 was greater than in 1938, the required discoveries are together less than the actual discovered reserves. This is due to the fact that almost the whole of the increase in production came in 1937 and that the years' supply in reserve advanced during 1935 and 1936.

Montana shows a decided drop in reserve, while Colorado shows a proportionate increase. In New Mexico large reserves have been discovered, but not enough to balance the increased production. As in California, however, the years' supply is greater than for the country as a whole and the decline is not dangerous. Texas shows a decline in years' supply, but, like Wyoming, the bulk of the increase in production came during 1937 so that the over-all picture shows an excess of discoveries over requirements. Texas, together with New Mexico and Colorado, are the only states whose position is more favorable than that of the country as a whole.

Discoveries in Oklahoma have been only slightly over half of the requirements and the years' sup-

Evangeline field, Acadia, Parish, Louisiana—To left, two deep producers. On right, part of state's oldest shallow field

ply available has become so small that enforced reduction of production will soon be necessary unless new fields are discovered. It appears that it will soon be physically impossible to maintain Oklahoma's present production. Kansas, on the other hand, is slowly improving its position, and, with Texas, may be expected to benefit by increased allowables as production from Oklahoma declines.

Arkansas has held its ground during the past three years, while North Louisiana shows a definite upturn in discoveries, although its position with respect to years' supply is practically unchanged. This is due to the fact that little increase in production was obtained during 1935 when large discoveries were made, and in 1936 conditions were almost exactly reversed. In Coastal Louisiana, discoveries have about balanced requirements, although the years' supply is greatly reduced. This is due to the abnormally low production of 1934 as compared with that of the past three years.

Illinois, like Wyoming, had a rapid increase in production in 1937, but its discoveries during that year were not sufficient to permit it to maintain its statistical position. All of the other eastern states show declining reserves, with Michigan in the position of being the only state in the Union whose discoveries are of importance but whose production is so large as to deplete its new fields so rapidly that its position grows steadily worse in spite of these discoveries.

With the probable exception of Oklahoma and Michigan, it is evident that the A.P.I. 1935 estimate for those states with less than five years' supply was too low. Oklahoma and Michigan provide the only two examples of dangerous depletion of reserves among the more important states, with California approaching this condition if production continues to increase without corresponding increases in reserves.

Based on some such calculations as are presented in this article, it is possible to regulate production from the various states so as not to discriminate against certain states or to favor others. It is also possible for state regulatory bodies to ascertain whether or not they are permitting the depletion of reserves. Owing to the fact that variations during any one year may reflect temporary conditions, a three-year average should be taken. The required new reserves should preferably be based on maintenance of years' supply at the last year's rate.

A state may show an increase in years' supply together with a deficiency in new reserves, or vice versa, because of irregularities in the rate of increase of production or of discovery of new fields as well as adjustment to the final year's production. Such a state may maintain its present production rate until such time as the two factors show the same trend. States which show a drop in years' supply and deficiency in new reserves are depleting their reserves at too rapid a rate and should curtail production in the interests of the industry as a whole. Those states which show an increase in years' supply and an excess of new reserves may safely increase their rate of production.

TABLE 2

Year—	Production	Increase times 11	New requirements	Discoveries*
1928	897,995,265	—64,409,642	833,585,623	1,936,000,000
1929	1,004,266,723	1,168,986,038	2,173,252,761	1,100,000,000
1930	901,740,870	—1,127,784,383	—226,043,513	4,000,000,000
1931	845,803,454	—615,311,576	230,491,878	517,000,000
1932	785,304,403	—665,489,561	119,814,842	1,030,000,000
1933	901,273,323	1,275,658,120	2,176,931,443	500,000,000
1934	903,104,233	220,140,010	923,244,243	700,000,000
1935	990,620,755	962,681,742	1,953,302,497	1,400,000,000
1936	1,089,113,699	1,083,422,384	2,172,536,083	900,000,000
1937	1,264,117,102	1,925,037,433	3,189,154,535	2,251,675,000
			13,546,270,392	14,334,675,000

*By Wasson except 1937—The Oil and Gas Journal. The 1937 figure includes adjustments for 1935 and 1936.

Summary

Based on the increase in production in 1937 over 1936, there was a deficiency in new reserves discovered of 898,676,994 bbls. if the years' supply of oil in reserve is to be maintained at the level of January 1, 1937.

In spite of the fact that on January 1, 1935, reserves amounted to 13.5 years' supply, and reserves of 4,726,014,000 bbls. have been discovered during the past three years, reserves now amount to only 10.7 years' supply at the 1937 rate of production. If 11 years' supply is considered the desirable reserve, there was a deficiency in newly discovered reserves of 477,626,656 bbls. during the three-year period.

It is probable that some of this apparent deficiency can be made up by a revision of reserves in older fields, particularly of the stripper type.

If production during 1938 is placed at 5 to 10 per cent greater than in 1937, new reserves of between 2,500,000,000 and 3,000,000,000 bbls. must be discovered during 1938.

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Bignell, L. G. E., "Reserves of More Than 500,000,000 Barrels Added During 1937," *The Oil and Gas Journal*, Jan. 27, 1938, pp. 38-39, 50-51.

Wasson, H. F., "Chronological Aspects of American Oil-Reserve Replenishment," *Petrol. Devel. and Techn.*, A.I.M.E., 1937, pp. 226-33.

Texas Attorney General Files Suit to Cancel Oil Leases

AUSTIN, Tex., Feb. 8.—Governor Allred Tuesday asked Attorney General William McCraw to file suits for cancellation of low-cash mineral leases awarded by Land Commissioner W. H. McDonald on tracts 68, 69, 70, 71, 73, 74, 75, 76 and 77 off Jefferson County in the Gulf Coast. This followed his request Monday and agreement by the attorney general to file cancellation of the low-cash award to Herbert Mallinson on tract 14 in Laguna Madre.

Cancellation suit was asked on the ground that large cash bids were rejected, and no drilling requirements were included on six of the nine tracts, and inadequate drilling requirements on others.

Six of the Jefferson coastal tracts were leased August 25 to A. G. Myers of Longview, R. J. Wolf of Tyler, J. A. Gooch of Fort Worth, I. E. Harwell of Burkburnett, M. S. Lake and J. G. Lewisohn, Austin. Tracts 70, 71 and 75 were leased to I. E. Harwell.

Texas Seeks Writ of Error In Reclaimed Oil Case

AUSTIN, Tex., Feb. 7.—The attorney general's department is seeking to halt shipment of more than 30,000 bbls. of alleged reclaimed oil at Gladewater. Application for a writ of error has been filed in the supreme court seeking to reverse a ruling of the Austin court of civil appeals which directed the railroad commission to authorize movement of the oil.

Beaver Reclamation Oil Co. at Gladewater claimed to have salvaged the crude from three creeks in 1935 after the oil had allegedly escaped and been abandoned.

"Because of the rulings of the court of civil appeals," the state's petition read, "opportunities are afforded through the operations of many of these plants for the movement of large amounts of 'hot' oil and products of 'hot' oil under the guise of being abandoned, waste or fugitive oil."

The commission rejected an application for tender after which the company sued. A trial court upheld the commission's refusal to grant the tender. The appellate court reversed the ruling.

Annual Meeting of the A.I.M.E. Opens in New York Next Week

The 148th annual meeting of the A.I.M.E. will be held in New York, February 14-17, opening with an "All-Institute" meeting Monday afternoon. President R. C. Allen will preside and will also act as toastmaster at the annual dinner, February 16, at the Waldorf-Astoria. The annual business meeting will be held Tuesday afternoon.

The preliminary program for the petroleum division was published in The Oil and Gas Journal of January 13, page 20, and the geophysical program on page 111 of the January 20 issue.

Comparison of Excise Taxes On Oil in Past Two Years

A comparison of excise tax collections for the calendar years 1936 and 1937 has just been issued by the Bureau of Internal Revenue, which includes the following figures:

	Tax receipts 1936	Tax receipts 1937
Gasoline, 1 cent per gal.	$186,541,995.81	$203,025,379.73
Lub. oils, 4 cents per gal.	28,985,547.05	33,681,590.41
Transportation of oil by by pipe line 4 per cent of transportation charge	10,423,607.70	12,304,202.71
Crude petroleum produced, processed, etc., 1/25 cent per bbl. (each operation)	859,758.21	967,374.81

TABLE 3

State—	Production 1934	Production 1937	Years' supply 1935	Years' supply 1938	New reserves 1934 Basis	New reserves 1937 Basis	New reserves Discovered	Excess or deficiency
California	175,508,566	238,591,887	19.9	12.5	1,079,632,968	924,027,520	151,000,000	†773,027,520
Wyoming	12,488,995	19,637,218	20.0	15.8	94,798,642	84,791,651	108,870,000	24,078,349
Montana	3,509,015	5,799,364	17.1	9.0	59,020,248	22,836,303	8,080,000	†14,756,303
Colorado	1,130,375	1,578,391	10.6	12.5	6,329,686	6,613,431	12,500,000	5,886,569
New Mexico	16,438,878	38,438,072	21.2	16.2	603,443,112	481,225,362	358,680,000	†122,545,360
Texas	378,233,017	502,967,214	14.5	13.7	2,021,837,536	1,988,575,083	2,696,834,000	708,258,917
Oklahoma	178,652,017	223,106,788	6.7	4.2	705,866,702	668,821,055	359,015,000	†309,806,055
Kansas	45,754,117	69,158,432	8.7	9.2	247,479,705	251,380,414	413,841,000	162,460,586
Arkansas	11,359,458	12,181,083	6.6	6.6	35,824,589	35,824,589	38,900,000	3,075,411
North Louisiana	9,251,061	28,593,723	5.9	6.0	101,046,343	101,657,765	180,900,000	79,242,235
South Louisiana	23,227,221	61,833,579	13.8	6.8	334,137,572	244,056,161	261,050,000	16,993,839
Illinois	4,472,000	7,426,000	7.8	5.2	23,888,548	21,151,032	20,050,000	†1,100,968
Indiana	816,000	821,200	6.1	3.8	2,390,753	2,386,774	500,000	†1,886,774
Kentucky	4,868,000	5,496,500	6.2	5.6	17,667,586	17,631,886	12,037,500	†5,594,368
Michigan	10,566,518	16,410,751	3.9	2.6	51,606,223	49,064,722	41,850,000	†7,214,722
New York	3,814,000	5,464,500	10.5	4.7	20,108,254	16,917,285	.....	†16,917,285
Ohio	4,299,000	3,549,900	7.0	5.2	9,860,000	10,208,460	.....	†10,208,460
Pennsylvania	14,572,000	19,173,500	16.5	9.8	77,421,745	67,630,653	100,000	†67,530,653
West Virginia	4,133,000	3,829,000	6.0	3.4	10,994,002	11,257,468	.....	†11,257,468
Total	903,104,233	1,264,117,102	13.5	10.7	.....	*5,141,834,156	4,664,207,500	*†477,626,656

*Based on 11 times 1937 production. †Deficiency.

Shallow Gasoline Discovery at Airport Still Puzzle

By T. P. SANDERS

LOS ANGELES, Feb. 7.—It has been nearly two years since gasoline was discovered at a depth of 35 feet near the Culver City airport in the Los Angeles Basin. Within the past two weeks two wells have been completed in this shallow zone as commercial producers.

There is a great difference of opinion concerning the source of the gasoline. Since the commodity produced is a typical casinghead gasoline in most respects, and since it occurs near the surface in an area crossed by gasoline lines, most individuals conclude it is merely an accumulation from a pipeline leak. However, those who have given the matter more attention are somewhat less inclined to accept this supposition and recognize the possibility that the accumulation may be the result of natural processes.

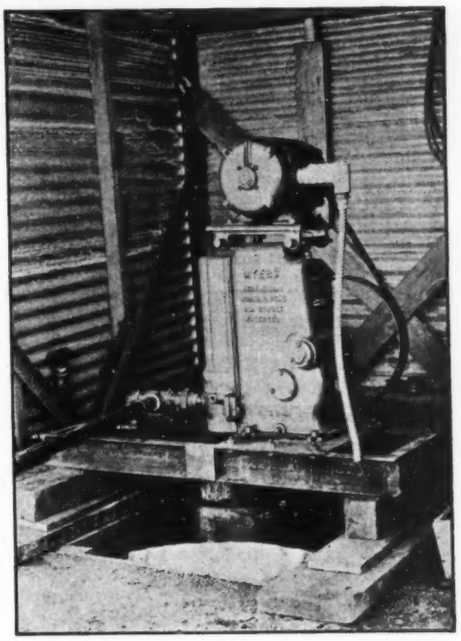
A large quantity of gasoline has been produced to date, and there are no definite signs of the supply becoming exhausted. Evidence at present leads one to believe the gasoline occurs in a buried river bed. Somewhere along the course of this bed the gasoline was introduced, perhaps from a leaking pipe line or perhaps from vapors which ascended along a fault plane to be condensed near the surface.

The deposit was discovered on flat terrain southeast of the Baldwin Hills. A cesspool digger encountered the gasoline at 34 feet in what appeared to be a medium to coarse river sand. It was believed to be from a nearby pipeline and the cesspool was abandoned. Some time later, Petroleum Transportation Co. became interested and began an investigation. It is reported that the nearby pipe line, owned by Shell Oil Co., was subjected to a 24-hour pressure test with no evidence of leakage. Leases were then acquired and a test hole was dug with a cesspool bucket about 30 feet from the abandoned hole. Considerable clay interbedded with sand and shale was found. At 34 feet the gasoline was found immediately below a black gummy clay streak 3 or 4 inches thick. The sand body was found to be about 10 feet in thickness, but only the top 4 feet contained gasoline and this was underlaid by water. Since the well was drilled into the water, both fluids were produced when a pumping test was made, but in 24 hours 85 bbls. of water-free gasoline were obtained.

A second well, drilled 30 feet from the first producer, encountered similar conditions, but 6 subsequent holes have all been dry though three showed small quantities of gas. One hole was only 30 feet from the second producer, while three other dry holes were near the Shell gasoline line, which runs down Centinela Avenue 730 feet west of the producing wells. Additional drilling has been deferred until the value of the deposit can be determined more thoroughly by the two producing wells. If the wells continue to hold up, the property will be explored with core holes in an attempt to determine the course of the supposed river bed. In the meantime, several tests are being made by owners of nearby property. Petroleum Transportation Co. has 55 acres under lease while 169 additional acres are held by option.

In the first well 16-inch casing was cemented above the sand. A 12-inch string with 4 feet of perforations was run to bottom and a gravel pack was installed around the perforations. A cement plug was used in the bottom to exclude part of the water. Completion of the second well was simpler, using only one string of casing. Pumping is accomplished with motor-driven water-well pumps using 2-inch tubing, one-half-inch pipe for sucker rods, and large sized working barrels.

The production of the first well has been regulated for about 25 bbls. per day, since it has been found the fluid level is not lowered at this rate. Some water is purposely produced, since it is difficult to lift the highly volatile gasoline without water present. Separators are used to remove the water before the gasoline goes to the 12,000-gallon stock tank on the lease. The product is sold to Los Alamedas Refining Co. for $2.10 per barrel. At the refinery it is being pumped into the crude oil storage tanks, but since evaporation losses are high, it is planned to charge it directly to the stills with the crude.



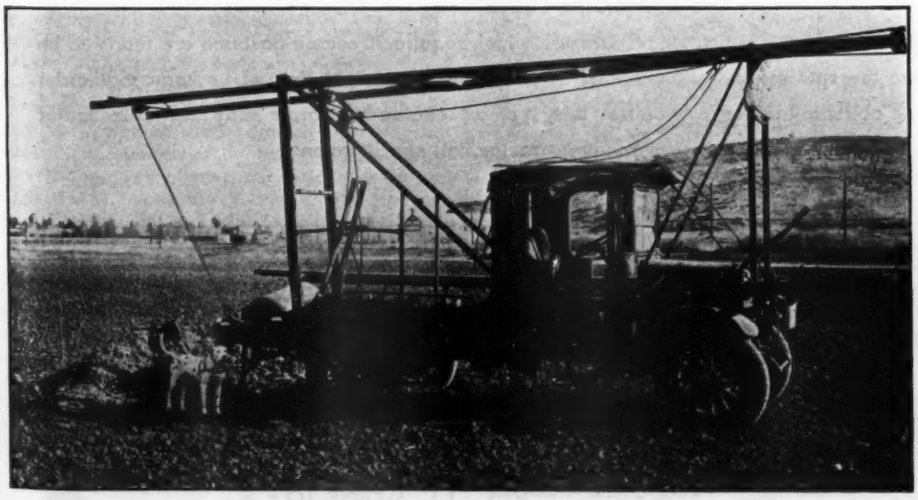
Pumping equipment for gasoline well. Since the gasoline is volatile some water must be produced for efficient operation

The gasoline as produced from the wells has been tested by California Testing Laboratories, Inc. with the following results:

A.P.I. gravity, deg.	69.0
Endpoint, °F.	362
Residue, per cent	2.3
Octane No. CFR motor method	73
Distillation test °F.—	
Initial boiling point	87
15 cc.	107
30 cc.	117
60 cc.	130
90 cc.	140
120 cc	154
150 cc.	168
180 cc.	187
210 cc.	200
240 cc.	217
270 cc.	269
285 cc.	362
Endpoint	362

There is no record of oil ever having been produced before in California which so closely resembles standard motor fuel. It has a slight amber color. This strongly suggests the accumulation is from a pipe line. However, the overlying clay beds appear to exist throughout the surrounding flat lands, and it is difficult to imagine gasoline in any appreciable quantities migrating very far underground after escaping from a pipe line. Also, the position of the gasoline in the sand suggests that it displaced water in assuming such a position, unless the migration took place during a period when the water table was greatly depressed. Normally the fluid is evidently under some pressure, since 14 inches of gasoline came into the first hole in 5 minutes as soon the sand was penetrated. If the gasoline had to displace water in the sand, it must

(Continued on Page 24)



Drilling rig used to drill the gasoline wells. A cesspool bucket is rotated by a power takeoff drilling holes up to 25 inches in diameter

SPARKS FROM THE NEWS

MICHIGAN WILDCAT

Michigan furnished the most important field development of the week with a flowing well in Midland County, 10 miles from the closest production.

MORE ORDOVICIAN

The southern part of the West Texas Basin makes the headlines with an Ordovician well in Pecos County. It is the third deep producing structure in that area.

CONSUMER PAYS

Politicians in the coal regions are sponsoring the federal tax on fuel oil, and the government is interested in the possibilities of additional revenue. Consumers of both coal and oil will hold the sack if a tax becomes effective.

IN SECOND PLACE

The Wilmington field, in California, is rapidly approaching a daily production of 100,000 barrels, which will rank it second only to East Texas in that respect.

COLORADO STRIKE

After several failures over the past two years, eastern Colorado appears to have something in a deep wildcat strike in Cheyenne County. The test is 30 miles from Kansas line.

WEATHER NOTE

Refiners who withheld furnace oils from the spot market in January, believing higher prices would be obtainable later, are questioning their wisdom now.

KEEPING PACE

Oil is more than keeping pace with gold in the United States. Gold reserves are valued at $12,760,000,000 and known oil reserves now total 13,489,000,000 barrels, worth more than the gold.

PROCRASTINATION

The better tone of the Mid-Continent gasoline market resulting from plant shutdowns and cutbacks creates wonder as to why they weren't put into effect generally before stocks grew to fantastic figures.

WILCOX IN GRABER

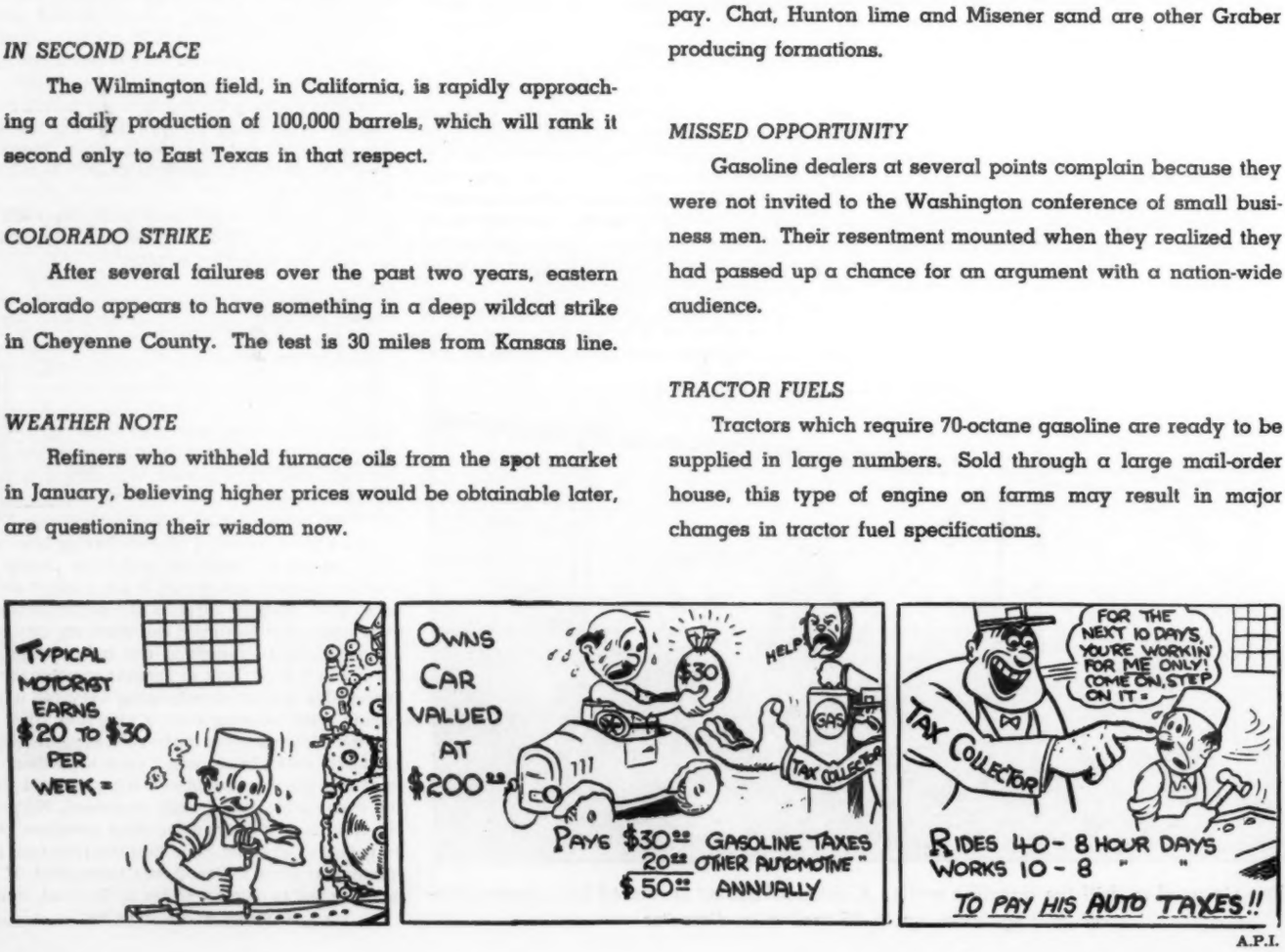
Outlook for the Graber pool, McPherson County, Kansas, was brightened the past week with discovery of Wilcox sand pay. Chat, Hunton lime and Misener sand are other Graber producing formations.

MISSED OPPORTUNITY

Gasoline dealers at several points complain because they were not invited to the Washington conference of small business men. Their resentment mounted when they realized they had passed up a chance for an argument with a nation-wide audience.

TRACTOR FUELS

Tractors which require 70-octane gasoline are ready to be supplied in large numbers. Sold through a large mail-order house, this type of engine on farms may result in major changes in tractor fuel specifications.


TYPICAL MOTORIST EARNS $20 TO $30 PER WEEK =
OWNS CAR VALUED AT $200.00
$30
HELP
GAS
TAX COLLECTOR
PAYS $30.00 GASOLINE TAXES
20.00 OTHER AUTOMOTIVE "
$50.00 ANNUALLY
FOR THE NEXT 10 DAYS, YOU'RE WORKIN' FOR ME ONLY! COME ON, STEP ON IT =
TAX COLLECTOR
RIDES 40 - 8 HOUR DAYS
WORKS 10 - 8 " "
TO PAY HIS AUTO TAXES!!

A.P.I.

Widespread Leasing in Western Kansas

By DAL DALRYMPLE

The search for new oil reserves in Kansas this year probably will equal and may exceed the exploratory campaign of 1937 which established a record in wildcat activity and resultant discoveries.

Several factors indicate widespread wildcatting throughout the year. Leases on thousands of acres in central and western Kansas expire this year. This is expected to cause many wildcats to be drilled as leaseholders attempt to discover oil or gas reserves before surrendering leases.

Seismograph crews have been active in many undeveloped areas in the western part of the state, as many as 12 groups being in the field the first of the year. Their findings undoubtedly will be followed by drilling of more wildcats.

The necessity for discovering new reserves to offset declining production in older areas and to keep pace with a growing demand for crude oil naturally will result in additional exploration.

This early in the year numerous outpost tests have been started, as many as 15 new wildcats being reported in one week recently.

Search for new reserves follows a farflung leasing and geophysical exploration campaign that extends westward to the Colorado boundary and over much of western Kansas from Oklahoma to the Nebraska line.

Near Colorado Line

A recent report of one big land deal is indicative of the magnitude of lease spreads in the western counties. The report was that Stanolind Oil & Gas Co. had taken over a 35,000-acre block in Greeley County, 20 to 25 miles east of the Colorado line, and mostly in Townships 16, 17 and 18, Ranges 39 and 40w. The company also has a 15,000-acre block that extends from Kiowa County, Colorado, into western Greeley County, with Texas Co. and Continental Oil Co. holding nearby acreage. Extensive seismograph explorations have been made in these districts.

More than 12,500,000 acres are under lease for oil and gas exploration in 90 of the state's 105 counties, the largest amount of leases in effect since the decline of the last major lease play in 1930. A large number of the leases now in effect bear 1938 expiration dates, but many more were taken in 1937, the leasing program continuing into 1938 and showing little sign of slowing down.

In Stafford County

Stafford County, perhaps, leads the state in percentage of land under lease. As much as 95 per cent of that county is leased for oil and gas, according to N. E. Haner of Mid-Continent Map Co., Wichita. Several new producing areas were opened in Stafford County in 1937, and now it is among the leaders in wildcat drilling activity as a glance at the map clearly shows.

In Barton, Ellis, Pratt and Rooks counties some 90 per cent of the land is leased and these counties, too, are popular hunting grounds for wildcatters.

Leaseholders have some 80 per cent of the acreage in Reno and Rice counties, as well as in the Hugton gas district of Stevens, Grant and Haskell counties.

Barber County increased in oil and gas importance in 1937, and a continuation of activity in that southern sector is indicated by the fact 70 per cent of the county's total acreage is leased.

Many Areas Leased

Percentage of total acreage under lease in some other counties popular with the oil men: Rush and Russell, 60 per cent each; Graham, Kiowa, Ness, Pawnee and Trego, more than 50 per cent; Comanche, Ellsworth, Hodgman, Kingman, Lane, Scott, Seward and Sumner, 40 per cent each; Ford, Gove, Kearny and Sedgwick, about 33 per cent; Finney, Gray, Norton, Osborne, Phillips and Wichita, 20 per cent. Large percentages of some of the more easterly counties also are under lease, with scattered tracts held by oil men in many other counties.

The 1938 leasing campaign is off to a fast start. In one week in January leases were filed for record in 28 western Kansas counties, with some of the more prominent lease plays in southern and western Rooks, eastern Stafford, southern and northwestern Pratt, western Ness, northeastern Rush, southern Kingman and northwestern Grant. Earlier in January major lease plays were reported in eastern Wallace, western Lane, northern Kearny, northern Barber, northeastern Trego and northern Harper. Blocks are being assembled in these and other western counties, with numerous leases being recorded each week.

Compared to Wheat

Extent of leasing in Kansas compares favorably with total acreage planted to wheat, the state's major crop. Wheat acreage at the beginning of the year totaled 17,446,000 acres, less than 30 per cent more than the land under lease for oil and gas.

Much of the new land leased, of course, will not be tested this year. Some is for short terms, however, and will require early drilling. Other acreage, taken in the 1928-30 leasing spree or prior thereto and expiring this year or in 1939, must be tested at an early date if lessees are to protect their holdings. It is inevitable, then, that many wildcats will be drilled.

Some operators, holding to belief it is a waste of money to build up reserves with a spirited drilling campaign so long as the demand for crude is slumping, say activity in the state will be comparatively slow in proven areas until spring. Be that as it may, there is no indication of a recession in wildcatting.

A majority of the outpost tests of 1938 will be drilled in areas close to production or along proven trends, but there is no doubt several tests commonly termed "rank" wildcats will be drilled in outlying districts many miles from the oil country. Some have been started or announced for early commencement since the first of the year.

These include the state's farthest northwest

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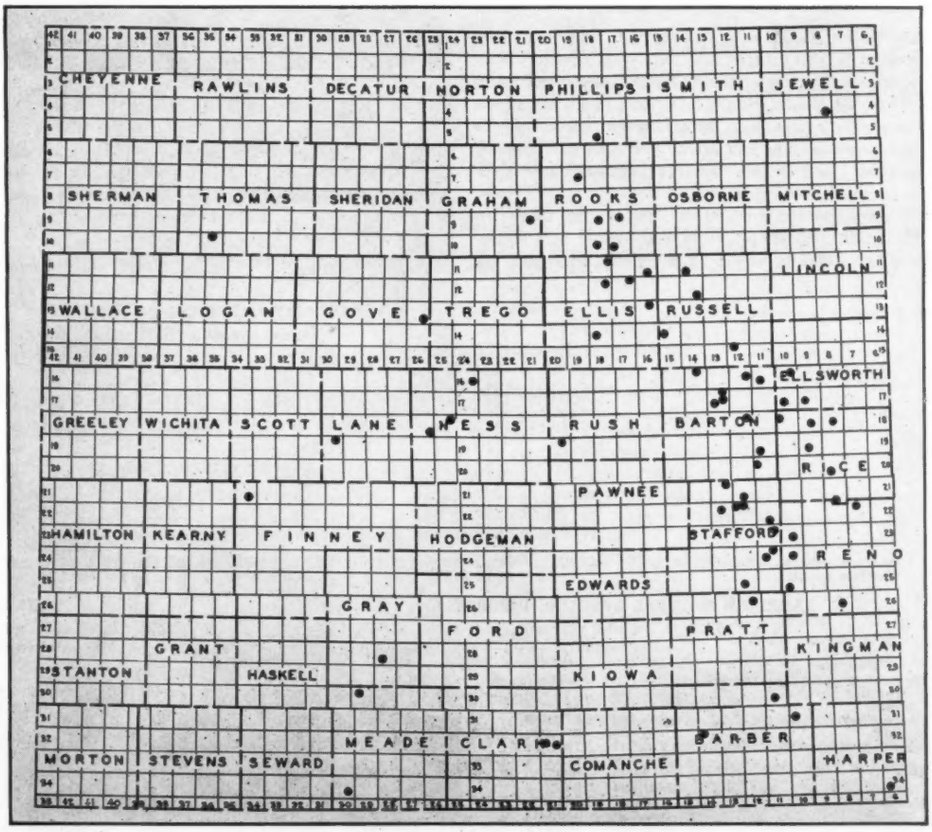


Wildcat operations now are listed in 23 western Kansas counties, each black dot representing one wildcat

Canada Our Best Customer for Imports From Venezuela, Home

By H. STANLEY NORMAN

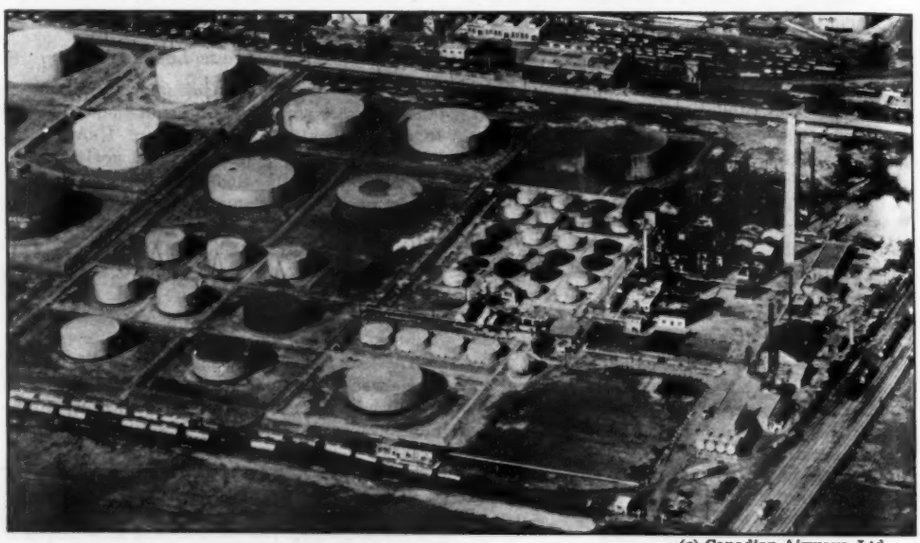
NEW YORK, Feb. 7.—Despite an increase of nearly 90 per cent in Canadian crude oil production and a gain of 113 per cent in crude imports from Venezuela, Canada still ranks first among outside consumers of United States crude. Sufficient data are at hand for the past year to permit a fair appraisal of our oil trade with Canada. While the December statistics are not yet available, generalities of the first 11 months will be altered only slightly.

With more than 50 refineries within its borders, the Dominion's dependence on outside petroleum supplies is confined chiefly to crude oil. During the past year, four countries supplied all of the crude imported by Canada. In order of importance they were: the United States, Colombia, Venezuela and Peru.

The past year is the first in which Venezuela contributed more crude to Canada than did Peru, where subsidiaries of Imperial Oil Co., dominant Canadian company, own and operate extensive producing properties. The importance of Venezuela as a supplier of Canadian crude oil requirements is expected to be extended under the arrangement between International Petroleum Corp., subsidiary of Imperial Oil Co., and Mene Grande Oil Co., Venezuelan producing subsidiary of Gulf Oil Corp. The sharp advance in Canadian imports of Venezuelan crude in 1937 was probably at least a forerunner of the deal announced December 31 by which a regular supply will be available for an indefinite period of years. Under terms of the arrangement, Mene Grande agrees to divert all Venezuelan production in excess of its own requirements to International. Involved in the negotiations was an advance of $125,000,000 paid to Mene Grande by International against future crude deliveries.

As apparent in the accompanying table on Canadian imports of crude, the United States continues to supply about 70 per cent. In supplying 24,731,675 bbls. during the first 11 months of 1937, United States exports to Canada were increased only 95,989 bbls. over the same period in 1936. This slight increase was due to greater Canadian output and the sharp gain in shipments from Venezuela.

Canada's increased production came from Turner Valley, which ended the year with 35 producers capable of yielding 26,803 bbls. per day. Exploration of this district continues at an uninterrupted rate and the field is expected to contribute more to Canada's petroleum requirements this year. Under the established lines of supply it appears that higher domestic production and greater imports from Venezuela probably will displace Colombian and Peruvian crudes rather than those from the United States. This is largely due to some Canadian refineries having their company-owned sources of crude in this country. Protection of Turner Valley crude by barriers to Montana oil has been considered, but has received little official encouragement from Canadian authorities as it is still relatively small compared to the Dominion's entire requirements. Furthermore, the United States occupies a favored nation posi-



(c) Canadian Airways, Ltd.

Montreal refinery of McColl-Frontenac Oil Co., Ltd.

CANADIAN CRUDE OIL IMPORTS

(Figures in Imperial gallons)

Month—	United States 1937	United States 1936	Colombia 1937	Colombia 1936	Peru 1937	Peru 1936	Venezuela 1937	Venezuela 1936	Trinidad 1936	Total all countries 1937	Total all countries 1936
December	.....	44,393,050	.....	7,845,553	.....	8,491,438	.....	.....	.....	.....	.....
November	104,194,467	109,746,825	26,453,675	15,181,678	17,011,506	11,489,498	12,463,973	10,355,107	.....	.....	.....
October	23,989,148	116,035,775	18,129,234	18,848,603	6,087,933	16,084,773	11,465,799	7,193,469	1,955,041	.....	.....
September	116,412,121	108,005,422	17,083,405	14,655,333	11,281,383	7,794,529	9,303,675	7,557,235	.....	.....	.....
August	117,815,173	104,768,639	14,112,450	18,301,641	4,439,872	20,975,875	22,199,360	3,787,891	.....	.....	.....
July	124,597,100	94,694,384	10,999,954	7,708,896	2,738,882	9,799,933	27,144,087	10,468,048	.....	.....	.....
June	120,606,238	112,179,336	16,162,385	23,797,618	10,302,326	14,444,031	10,447,333	7,435,561	.....	.....	.....
May	82,944,064	71,188,062	21,884,045	11,764,155	13,086,565	10,009,111	16,224,846	10,556,035	.....	.....	.....
April	36,576,611	33,346,221	.....	8,648,950	10,185,893	9,342,561	10,378,501	.....	.....	.....	.....
March	43,572,125	51,403,028	.....	3,951,463	4,258,083	10,028,708	2,962,700	.....	.....	.....	.....
February	46,428,755	35,758,467	3,021,547	3,896,449	3,094,670	8,648,542	.....	.....	.....	.....	.....
January	48,472,809	25,122,866	.....	6,376,595	6,236,628	9,634,184	.....	.....	.....	.....	.....
Eleven months	865,608,611	862,249,025	127,846,695	133,131,481	88,723,741	128,251,750	122,590,274	57,353,346	1,955,041	1,204,769,321	.....
Twelve months	.....	906,642,075	.....	140,976,934	.....	136,743,188	.....	57,353,346	1,955,041	.....	1,243,670,584

CANADIAN NATURAL GASOLINE IMPORTS

(Figures in Imperial gallons)

Month—	United States 1937	United States 1936	Peru 1937	Peru 1936
December	.....	2,836,564	.....	.....
November	3,936,033	2,166,643	2,564,860	2,556,182
October	2,117,111	3,461,235	2,512,408	2,572,243
September	6,345,224	1,610,840	.....	.....
August	1,086,989	976,196	2,569,547	.....
July	6,216,791	2,139,969	.....	2,575,637
June	1,768,368	2,720,634	2,546,528	.....
May	848,236	526,500	2,550,719	5,435,937
April	2,923,184	1,840,252	.....	.....
March	417,493	2,181,499	2,515,337	2,368,159
February	330,656	350,093	.....	.....
January	563,485	580,013	2,483,713	2,500,877
Eleven months	26,553,570	18,513,514	17,743,112	18,009,035
Calendar year	.....	21,390,078	.....	18,009,035

CANADIAN GASOLINE IMPORTS

Lighter than .8235 specific gravity at 60° F. (Imperial gallons)

Month	United States 1937	United States 1936	Rumania 1937	Rumania 1936	Alaska 1937	Alaska 1936	Un. Kgdm. 1937	Un. Kgdm. 1936
December	.....	997,079	.....	.....	.....	60	.....	.....
November	1,825,660	1,225,211	.....	.....	216	296	.....	6,802
October	2,701,962	1,620,328	.....	316,000	9,357	92	.....	.....
September	4,982,534	1,882,078	115,000	329,000	3,115	[illegible]	.....	.....
August	3,166,358	1,865,522	245,000	40,000	.....	[illegible]	.....	.....
July	2,751,596	2,326,103	125,000	.....	1,889	1,571	6,682	.....
June	1,999,881	2,092,835	250,000	1,160,000	2,348	2,084	.....	.....
May	1,352,407	1,426,113	.....	.....	42	631	.....	.....
April	1,153,387	1,050,768	.....	.....	1,15	5,253	.....	.....
March	1,709,292	917,936	.....	.....	3,444	.....	.....	.....
February	760,232	766,740	.....	.....	200	417	.....	.....
January	875,184	1,041,100	.....	.....	.....	.....	.....	.....
Eleven months	23,278,493	16,214,734	735,000	1,845,000	21,167	14,173	6,682	6,802
Calendar year	.....	17,211,813	.....	1,845,000	.....	14,233	.....	6,802

Crude Oil; Output Up

Flood-lighted station at London, Ontario

tion with Canada and to raise a stiff import tax against crude from this country would increase the cost of products to all Canadian motorists, involving an almost certain reaction.

In absorbing about 24,731,675 bbls. of crude from this country, Canada accounted for approximately 40 per cent of United States crude exports during the first 11 months of 1937. From January to November, the United States exported 62,170,000 bbls. of crude. During the same period in 1936 when the United States exported only 46,518,000 bbls. of crude, 24,635,686 bbls. went to Canada, or more than 50 per cent.

There was an overall increase of 1,886,407 bbls. in crude imported by Canada during the first 11 months of 1937 compared to the same period in 1936, but most of the increase came from Venezuela, with a very slight gain from the United States. Colombia's loss was slight, but imports from Peru dropped to 2,534,964 bbls., a loss of 1,129,372 bbls.

CANADIAN CRUDE OIL PRODUCTION

Month—	1937 (bbls.)	1936 (bbls.)	1935 (bbls.)
January	141,078	120,261	123,940
February	153,906	106,973	110,403
March	176,657	116,611	119,333
April	188,014	109,104	114,417
May	192,845	114,297	125,035
June	209,181	114,141	120,400
July	241,737	142,404	122,230
August	288,934	142,572	121,517
September	298,753	135,684	124,540
October	342,452	137,004	123,546
November	341,517	129,152	117,048
December	.....	139,728	124,795
Eleven months	2,575,074	1,368,203	1,322,409
Calendar year	.....	1,507,931	1,447,204

Since the indicated Canadian consumption of gas oil and fuel oil is almost as great as that of gasoline, greater imports of Venezuelan crude would presage diversion of the lighter crudes from Peru and Colombia to channels requiring a higher percentage of gasoline. The ratio of fuel-oil consumption to that of gasoline is something of the order of 5 to 6. Canada's fuel-oil demand in 1936 was 15,208,158 bbls. and that of gasoline 17,547,619 bbls.

From a standpoint of volume, the gasoline trade with Canada is relatively unimportant. During the first 11 months of 1937 the gasoline exported to Canada from the United States totaled only 665,100 bbls., but it was a gain of 30 per cent over the preceding year when shipments totaled only 463,278 bbls. The rise in gasoline imports from the United States was accompanied by a drop of more than 50 per cent in receipts from Rumania, which in 1936 was only a minor factor. Imports of gasoline into Canada from Alaska are extremely small and supply isolated mines.

There is considerably more natural gasoline imported by Canada than the refined product. The imported supply comes from the United States as the largest source, and Peru. During the first 11 months of 1937 the United States shipped 758,673 bbls. of natural gasoline to Canada, while Peru supplied an additional 506,946 bbls. Total imports of natural gasoline of 1,265,619 bbls. for the first 11 months last year, compared to 1,043,501 bbls. for the same period in 1936.

Statistics indicate the United States is gradually capturing a larger share of the increased demand for natural gasoline in Canada. In the first 11 months of 1936 the United States supplied 528,957 bbls., compared to 514,544 bbls. drawn from Peru.

The extent to which petroleum demand has increased in Canada may best be shown by the progress in the refining industry. In 1937 there were 50 plants with combined capacity of 171,160 bbls. per day. Ten years ago there were only 16 refineries in the Dominion.

It is estimated by the Canadian Department of Trade, Dominion Bureau of Statistics, that Canadian refineries spent $46,026,181 with United States crude producers in 1936, the largest expense in the Dominion refining industry. Other crude oil processed cost the Canadian refiners at their plants $16,559,645.

British American's Royal Crest well in Turner Valley

Other materials and fuels utilized by the Canadian refining industry in 1936 boosted the total cost of material to $66,219,148, compared to $58,415,916 during the preceding year.

Since 1932 the Canadian motor vehicle registrations have increased from 1,114,505 to 1,240,124 at the start of 1937. In view of the motor car manufacturing industry's activity in 1937, it would be apparently safe to estimate that total registrations may now have reached 1,500,000. Nearly half of the motor vehicles are concentrated in the province of Ontario, which had 590,226 units at the end of 1936.

Oklahoma Allowable Is Reduced By 35,000 Barrels Daily

The Corporation Commission of Oklahoma, acting upon the recommendations of William J. Armstrong, conservation officer, has issued an emergency proration order cutting the daily allowable for Oklahoma to 500,000 bbls. per day for February. This order is retroactive to February 1 and reduces the daily runs by 35,000 bbls. below the commission's first order, or 69,700 bbls. below the recommendations of the Bureau of Mines for February. This situation has developed since January 28, when the order for February was issued. It has been brought about by the storage of about 40,000 bbls. of oil daily in Oklahoma as well as by the production of considerable oil in excess of demand in Kansas and Texas. In Kansas the situation has been met by the pipe line companies prorating wells and taking only such oil as could be delivered to eastern refineries.

In issuing the February order the commission estimated that 50,000 stripper wells in Oklahoma would produce about 164,403 bbls. daily, and this deducted from the 535,000 bbls. daily allowable for the state leaves 370,493 bbls., of which 35,000 bbls. is to be restricted, or about 9.5 per cent. The effective proration below the original order will be nearly 10 per cent.

In addition to issuing the emergency order, Mr. Armstrong issued a call for a hearing February 18, when the state's oil situation will be reviewed.

If actual production for 1937 had been in accordance with the recommendations of the Bureau of Mines the present situation would not exist. Total production for 1937 was 1,264,117,102 bbls., and the bureau's recommendations were 1,221,267,300 bbls. The overproduction on this basis was 42,849,802 bbls. for the year.

Thompson Suggests Reduction of 14 Per Cent Below Bureau

MIDLAND, Tex., Feb. 7.—A reduction in oil production equal to 14 per cent below the Bureau of Mines estimate for January, was advocated by Col. E. O. Thompson, chairman of the Interstate Oil Compact Commission, in the following statement:

"Statistics of Monday on the oil and gasoline storage situation—that is, oil aboveground, on hand and unsold—show it is going to be necessary, in order to balance supply with demand—or, stated another way, in order to prevent production of oil in excess of market demand—there must be actually achieved a cut in production equaling 14 per cent below the Bureau of Mines estimate of market demand for January, 1938."

Program for Southwestern District A.P.I. Production Division

The program committee in charge of the spring meeting of the Southwestern District, A.P.I. Division of Production, to be held in the Blackstone Hotel, Fort Worth, Tex., on March 24-25, has practically completed its tentative program. Following is an outline of the papers under consideration, speakers to be announced later.

Thursday, March 24

8:00 a.m. Breakfast meeting for officers of Southwestern District, presiding officers, and others.

10:00 a.m. Morning session. "Production Engineering." Presiding: W. S. Morris, East Texas Engineering Association; associate chairmen: C. E. Reistle, Jr., Humble Oil & Refining Co., and H. H. Hardison, Standard Oil Co. of Texas.

Developments in Cementing Practice Technique.

Pressure-Production Relationship — East Texas Field.

The Problem of Phase Relationships of High-Pressure Condensate in Distillate Wells.

2:00 p.m. Afternoon session. "General Session," presiding: A. G. Levy, Crown Central Petroleum Corp.

The Growth and Importance of Natural Gas in the Southwest.

Administration of the Oil Industry in New Mexico.

Friday, March 25

8:00 a.m. Breakfast meeting for officers of Southwestern District, presiding officers, nominating committee, and authors.

9:30 a.m. Morning session. "Production Practice," presiding: W. E. Schoeneck, Ohio Oil Co.; associate chairmen: L. A. Ogden, Pure Oil Co., and H. M. Staggs, Atlantic Refining Co.

Pipe for Transportation of Salt Water.

Selection of Casing Seats.

Well Treatment After Perforating.

Report of nominating committee and election of officers.

1:30 p.m. Afternoon session. "Drilling Practice," presiding E. A. Wahlstrom, Goldsmith Pool Engineering Committee; associate chairmen: C. G. Staley, Lea County Proration Office, and W. A. Alexander, Shell Petroleum Corp.

Drilling and Production Practices in the Permian Basin.

Determination of Porous Zones by Drilling Rates.

Deep Drilling on the Gulf Coast.

Marine Operations on the Gulf Coast.

The committee on arrangements is Fort Worth oil men: R. B. Kelly, chairman, Pure Oil Co.; F. J. Adams, Gulf Oil Corp.; R. A. Brewer, Continental Supply Co.; Amon G. Carter, Fort Worth Star-Telegram; J. D. Collett, Collett & O'Keefe; K. W. Davis, Mid-Continent Supply Co.; Charles Fitzgerald, Sinclair Refining Co.; E. A. Landreth, Landreth Production Co.; J. M. Loffland, Loffland Brothers Co.; A. M. McCorkle, Stanolind Oil & Gas Co.; Lip Norvell, Norvell Wilder Supply Co.; C. C. Patterson, Fort Worth Chamber of Commerce; T. W. Rhodes, Gulf Oil Corp.; S. W. Richardson, Richardson Oils, Inc.; Charles F. Roeser, Roeser & Pendleton; H. B. Simcox, Continental Oil Co.; S. A. Thompson, Westbrook-Thompson Holding Corp.; W. V. Vietti, Texas Co.; Charles Yager, Texas Pacific Coal & Oil Co.

Tractor Lubricant Featured In Associated Sound Film

LOS ANGELES, Calif.—Utilizing the medium of 16 mm. sound films in the sales promotion of "Caterpillar" approved diesel engine lubricant, known by the trade name of "Cadel," the Tide Water Associated Oil Co., Associated Division, is conducting a series of meetings on the Pacific Coast before community groups of company personnel and tractor owners and operators, according to Harold R. Deal, advertising and sales promotion manager. Ray Sollars, Cadel sales engineer, is conducting the sales and educational program for Associated and scheduling the sound film showings in 30 cities of California, Oregon and Washington.

Two films are being shown, the first depicting diesel tractors at work under all conditions. The second tells the story of the development of Cadel at Associated's modern refinery at Avon in upper San Francisco Bay. The work in connection with the research, manufacture and distribution of Cadel is interestingly told and shown, Mr. Deal adds.

North Texas Association Eighth Annual Banquet

WICHITA, FALLS, Tex. — Reservations for the eighth annual banquet of the North Texas Oil & Gas Association February 26 will probably exceed 500, according to J. Ed Erwin, executive vice president.

Axtell J. Byles, president of the American Petroleum Institute, and Col. Ernest O. Thompson, chairman of the Interstate Oil Compact Commission and Texas railroad commissioner, will speak.

Egloff to Give Lectures At Southern Colleges

CHICAGO, Ill.—The following lectures will be given by Dr. Gustav Egloff, director of research for Universal Oil Products Co., before various sections of the American Chemical Society: "Chemical Derivatives From Petroleum," February 14, University of Tennessee, Knoxville; "Motor Fuels and Lubricants," February 15, Wilson Dam, Ala.; "Chemical Derivatives From Petroleum," February 16, University of Chattanooga, Chattanooga, Tenn.; "The Modern Cracking Process," February 17, Georgia School of Technology, Atlanta, Ga.; "Research in Oil," February 17, before Research Club luncheon meeting at Atlanta; "The Modern Cracking Process," February 19, Jacksonville, Fla.

Recovery of Sabine Oil Land Sought by State

AUSTIN, Tex., Feb. 7.—Attorney General William McCraw has filed a motion for rehearing in the supreme court seeking to have that tribunal reverse its recent holding against the state in its efforts to recover 500 acres of highly valuable oil land along the Sabine River in Gregg County and for damages of $7,800,000 representing the value of oil taken therefrom.

Program Prepared for Pittsburgh Industrial Gas Conference

A program of great interest to every industrial gas man, manufactured and natural, has been arranged for the A.G.A. Industrial Gas Sales Conference at the William Penn Hotel, Pittsburgh, Pa., March 7 and 8. Hale A. Clark, Detroit City Gas Co., is chairman of the industrial gas section, and Franklin T. Rainey, Ohio Fuel Gas Co., is chairman of the program committee.

To Experiment in Disposal Of Salt Water in Upshur

FORT WORTH, Tex.—Humble Oil & Refining Co. has been granted permission by the railroad commission to experiment to determine the feasibility of disposing of salt water produced through the Woodbine sand into the Paluxy sand formation in Upshur County. Top of Paluxy is expected to be found at 4,950-5,050 feet.

Along the northern, western and southern edges of the East Texas field, disposal of salt water produced along with allowable oil has become a problem to some operators, and engineers have studied several plans to take care of the situation.

Should Humble find through its projected tests that the salt water may be successfully disposed of by placing it in the Paluxy sand through holes drilled for that purpose, the practice might become general in use among large operators.

Gulf Oil Wage Contract With Maritime Union

NEW YORK, Feb. 7.—The National Maritime Union (C.I.O.) has signed a wage and hour contract with Gulf Oil Corp. covering 1,100 unlicensed seamen on 29 oil tankers.

A three-week vacation with pay clause means the hiring of 65 additional men, the N.M.U. announced. Wage increases were $5 to $10 monthly.

East Texas Independents Form Petroleum Association

The East Texas Independent Petroleum Association has been formed, with headquarters at Longview, Tex., to collect and compile data on conservation and production matters for the benefit of independent operators and royalty owners. F. C. Barclay of Longview has been named manager. M. T. Flanagan is the new president and John J. Thomas, secretary-treasurer.

Arrangements Are Completed for A.P.I. Meeting at Amarillo, Tex.

Arrangements have been completed for the spring meeting of the Mid-Continent district of the A.P.I. Division of Production to be held at Amarillo, Tex., February 17-18. The preliminary program was published in The Oil and Gas Journal of February 3.

Canadian Tariff Commission Turner Valley Investigation

CHATHAM, Ontario. — The federal tariff commission, comprising G. H. Sedgwick, chairman, Charles P. Hebert and Milton N. Campbell, held sittings at Calgary last week to investigate the marketing situation in connection with Turner Valley crude. The board, accompanied by N. E. Tanner, minister of lands and mines for Alberta, first inspected operations in the Turner Valley field.

Complaints of unfair methods by major oil and refining companies were submitted by Robert Wilkinson, president of National Petroleum Corp., and Leon Plotkins of Lion Oils, Ltd., an independent refining company at Calgary. Statistics and maps bearing on Turner Valley operations were filed by C. W. Dingman, of the Alberta petroleum and natural gas branch.

Representatives of small refining companies and of various consumers marketing organizations in Alberta and Saskatchewan opposed a tariff on Montana crude. E. E. Frisk, representing Consumers Co-Operative Refineries, Ltd., of Regina, Saskatchewan, urged that lubricating oils and petroleum greases be admitted to Canada duty free or that a 10 per cent ad valorem duty be imposed on all lubricating oils and greases entering Canada irrespective of price or origin.

W. S. Campbell, representing the Alberta Petroleum Producers Association, announced his organization had no intention of asking for a tariff on Montana crude entering western Canada.

The hearing was resumed at Ottawa on February 1 when W. S. Campbell, for the Alberta Petroleum Producers Association, urged that proration in Canada is a different matter from that in the United States in that, while the latter has an excess of crude production, Canadian production is still short of the country's requirements. Modifications of freight rates and additional marketing facilities with a view to marketing of Alberta crude in eastern Canada were advocated.

Magnetic Storm

TUCSON, Ariz.—U. S. Coast and Geodetic Survey observatory here reports a moderate magnetic storm began at 9 p.m. February 5 and continued until 4 p.m. February 7, central standard time.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Not So Bad

A lot of things are being said about the present gasoline situation which are not true.

Unquestionably, there is need for downward adjustment of refinery operations but the situation is far from being as hopeless as some would have us think.

In the first place, demand for gasoline has not gone to the bowwows. Because an automobile worker out of a job in Detroit buys three gallons at a fill instead of the five he bought last summer does not mean that the whole gasoline market is being operated on that basis.

It is true unemployment in industrial centers does have some effect on the consumption of gasoline but even in those areas car owners who continue to buy gasoline on a normal basis far exceed those who feel compelled to restrict their purchases fractionally. Outside those centers it is difficult to detect a decline in purchases due to business recession.

It has been pointed out at various times that gasoline has become a depression-proof commodity. In the late depression domestic consumption continued to expand for two years after the depression started and never dropped below 98 per cent of the 1929 demand.

The need for greater economy during periods of business recession has actually increased the consumption of gasoline in many cases. The strong position of commercial vehicles, including trucks, buses and delivery cars, is partially due to the demand for lower transportation costs brought about during the depression.

The remarkable extension in the use of the cheaper diesel-propelled transportation is another illustration of this fact.

As has been said often, gasoline is no longer a luxury but a necessity, an essential in maintaining as well as expanding present-day progress.

All the year-end estimates pointed to increased domestic gasoline demand this year despite a probable reduction in new motor car registrations. There will still be more cars using gasoline than there were last year even if new car sales should decline 50 per cent below those in 1937.

Developments to date have substantiated those predictions and exports so far this year have been running ahead of exports last year.

This, of course, does not imply that the refining industry generally should ignore the present statistical position in regard to gasoline. There is too much gasoline on hand and there has been for several weeks.

If a healthier situation is not brought about through reduction in refining operations the gasoline market is heading for more trouble before the end of the year.

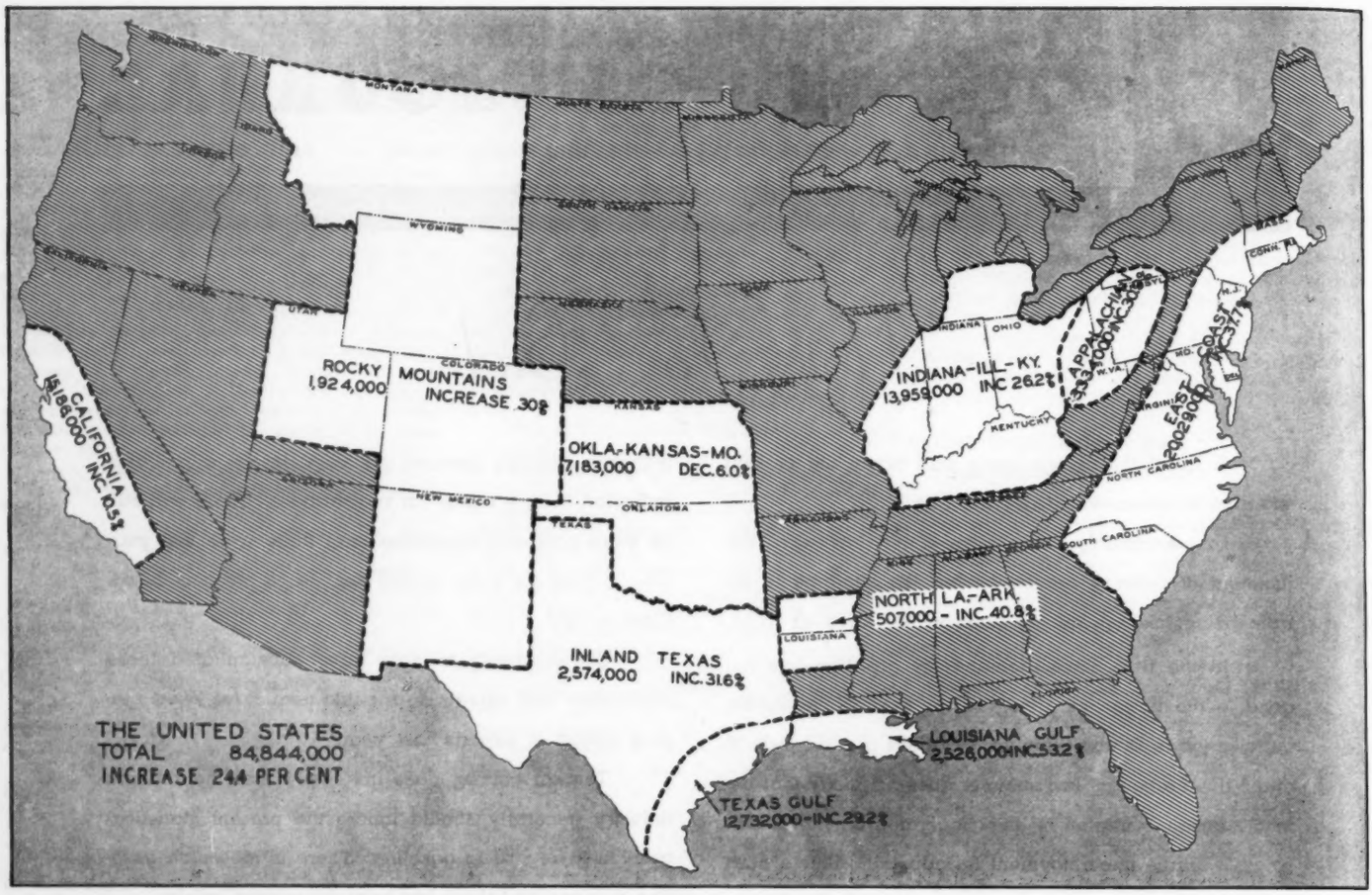
The latest reports show stocks at refineries and major terminals are 25 per cent larger than at the same time last year. Assuming a 5 per cent increase in domestic demand this year, present stocks, measured in days' supply, would still be 20 per cent greater than a year ago.

Yet with a larger demand assured, this excessive inventory need not be hopeless. A reduction in operations over the next 60 days, with saner operations during the balance of the year, would remove the threat contained in these stocks.

Refiners are nearing the end of the season of maximum demand for fuel oils with 17 per cent more stocks than they had a year ago. Curtailment is needed here.

A start has been made in this direction with encouraging results. The immediate objective is to continue this work of correction until a safer position has been attained.

Proper adjustment of the supply to possible demand will discount the bearish theories of alarmists who cannot see the doughnut for looking at the hole.



Gasoline stocks now and percentage increase or decrease over year ago. Data in barrels

Stocks of Crude and Products Increase 50 Million Barrels

By C. O. WILLSON

The oil industry has 50,000,000 bbls. more crude oil and the principal refinery products on hand than it had a year ago. This increase is about equally divided between crude oil, gasoline, and fuel oil and gas oil.

These enlarged inventories represent an additional investment of approximately $85,000,000 exclusive of tankage. More important is the fact that they bear a definite relationship to marketing conditions, the weekly figures being a barometer indicating whether or not the industry is maintaining a healthy balance between supply and demand.

So far as this discussion is concerned the gain in crude oil stocks will be dismissed as having little significance in the present market picture. The increase of 17,196,000 bbls. (Table 4) is less than six days' demand. Based on days' supply the 304,424,000 bbls. of refinable crude in storage is not as large as the smaller quantity was a year ago.

Market students agree that the crude stored underground in the form of proven reserves and the ability of the industry to restrict its production to current needs are the controlling factors in that division of its operations. Last year 584,000,000 bbls. were added to these reserves due to new field discoveries. These enlarged reserves unquestionably exert a pressure for greater production and, if uncontrolled, would bring about an oversupply of petroleum supplies. Should the present machinery of control fail, aboveground storage of crude would be increased and thus become a direct factor in markets. At this time these stocks are little if any in excess of actual working requirements.

Gasoline Stocks

The data in Table 1 show that gasoline stocks at the close of January were 16,664,000 bbls. or 24.4 per cent greater than on the corresponding date of last year. Just what this represents in excess supplies is a moot question among statisticians. Some claim that with adequate crude supplies and flexible refinery operations, gasoline stocks at the peak point of the year should not exceed 50,000,000 or 60,000,000 bbls. A few look on stocks as a "buffer" for the ups and downs of industry's operations and they justify large inventories on the ground that they contribute to stability.

In the present situation the 84,844,000 bbls. of gasoline in the tanks of 475 refineries and a number of major water terminals, represent 54 days' supply based on the expected demand for 1938. On the corresponding date last year the smaller stocks were equal to 45 days' supply. Comparisons of this type as well as the quantity figures are used in emphasizing the fact that present stocks are excessive and will become more so if the rate of increase is not materially lowered over the next 60 days.

Further to emphasize the present situation in the case of gasoline the fact is stressed by some that gasoline stocks a year ago were excessive in most areas in relation to what is termed a "normal" condition. The gasoline market began to weaken in the late spring last year, indicating that too much

gasoline was accumulated during the winter and spring period.

As shown in the accompanying map and table the bulk of the increase in gasoline stocks over last year has been in the coastal and one inland refining areas. Of the total gain, 9,268,000 bbls. or 55 per cent are accounted for by the increase at plants in the Louisiana and Texas Gulf Coast areas and along the Atlantic Seaboard. Add the gain in the Illinois, Indiana and Kentucky area and 76 per cent of the increase is determined.

Large Refineries

It is noteworthy that a large majority of the major refineries east of California are located in these four areas. This substantiates the contention that the bulk of the increased stocks is in the tanks of the larger operators. This situation is further indicated by the fact that gasoline stocks of Mid-Continent refiners (Oklahoma, Kansas, Missouri, inland Texas, North Louisiana and Arkansas) are only 3 per cent higher than they were a year ago. Stocks at Oklahoma, Kansas and Missouri refineries as a group are 6 per cent less than at the end of the first month of 1937.

These current data point to the need of further curtailment in the operations of the coastal refineries. They also demonstrate how the operating position of refining areas can change in a short period. A year ago the evidence of excessive gasoline stocks was largely confined to the inland areas.

Coastal refiners at that time, particularly the Gulf operators, were having difficulty supplying the demand for gasoline and other products and in several cases they had comparatively little gasoline on hand to back up the oncoming summer demand. A large gain in export shipments was a factor. Since that time new refineries have come on stream and the capacities of existing plants increased. The demand for some products slackened the latter part of 1937 and starting at that time there has been a tendency to oversupply existing markets for gasoline.

Compared to the remainder of the country, California supply and demand curves have reflected a healthy situation. Its present gasoline inventories are not considered far out of line with expected needs.

Data on gasoline stocks should be considered with the information on refinery runs summarized in Table 4. This table shows that East Coast, Louisiana Gulf and Oklahoma-Kansas refiners the latter part of January were running less crude to their stills than they did in January, 1937.

TABLE 1—GASOLINE STOCKS IN THE UNITED STATES

(Data in barrels)

	January 29, 1938	January 30, 1937	Increase	Pct. gain
East Coast	20,029,000	14,543,000	5,486,000	37.7
Appalachian	3,334,000	2,546,000	788,000	30.9
Indiana, Illinois, Kentucky	13,959,000	11,055,000	2,904,000	26.2
Oklahoma, Kansas, Missouri	7,183,000	7,647,000	*464,000	*6.0
Inland Texas	2,574,000	1,956,000	618,000	31.6
Texas Gulf	12,732,000	9,854,000	2,878,000	29.2
Louisiana Gulf	2,526,000	1,648,000	878,000	53.2
North Louisiana-Arkansas	507,000	360,000	147,000	40.8
Rocky Mountains	1,924,000	1,402,000	522,000	30.0
California	15,186,000	13,723,000	1,463,000	10.5
Total reported	79,954,000	64,734,000	15,220,000	
Estimated total	84,844,000	68,180,000	16,664,000	24.4

*Decrease. A.P.I. weekly reports.

TABLE 2—FUEL OIL AND GAS OIL STOCKS IN THE UNITED STATES

(Data in barrels)

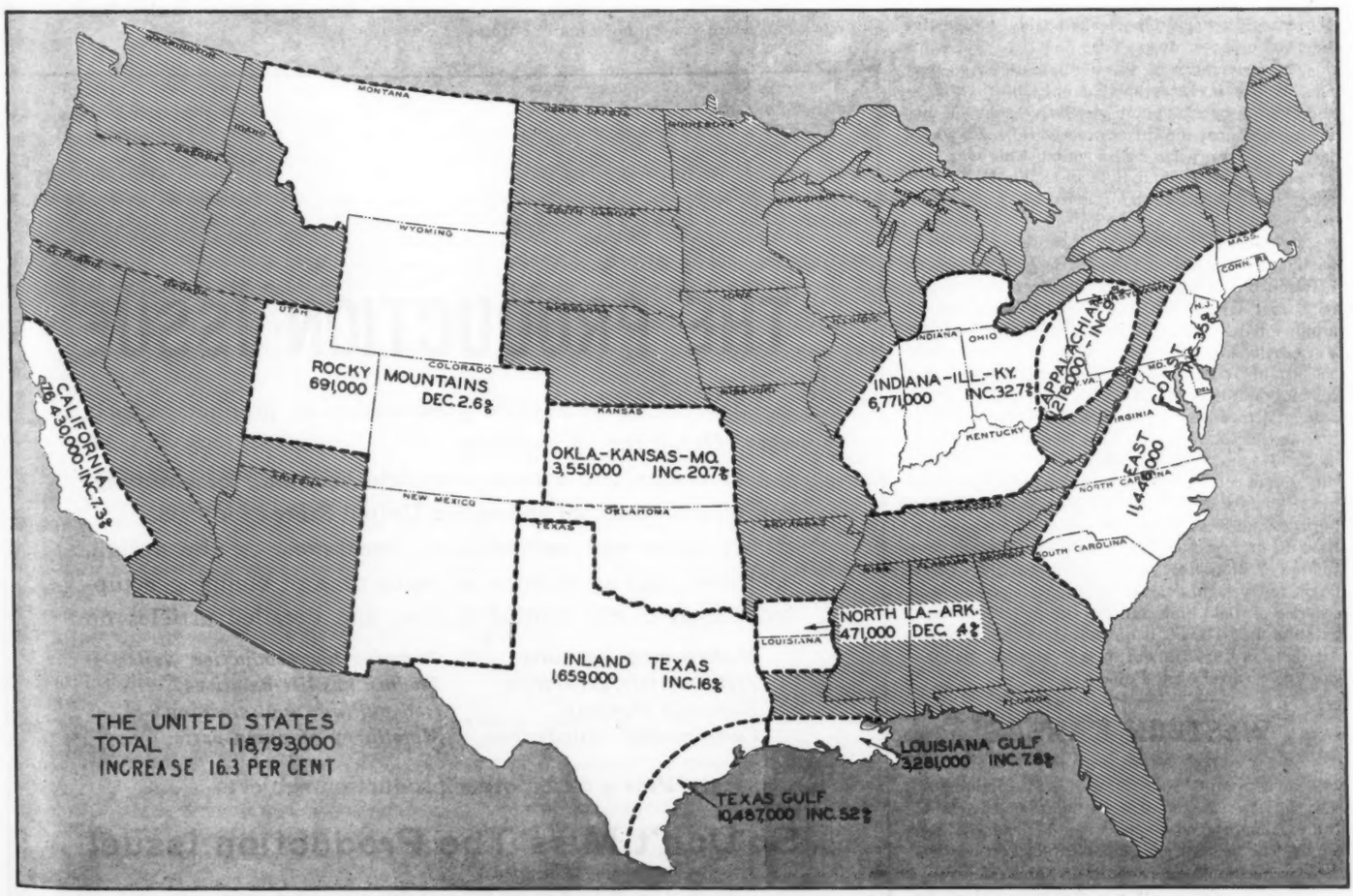
	January 29, 1938	January 30, 1937	Increase	Pct. gain
East Coast	11,446,000	8,479,000	2,967,000	35.0
Appalachian	1,216,000	616,000	600,000	97.0
Indiana, Illinois	6,771,000	5,102,000	1,669,000	32.7
Oklahoma, Kansas	3,551,000	2,939,000	612,000	20.7
Inland Texas	1,659,000	1,430,000	229,000	16.0
Texas Gulf	10,487,000	6,901,000	3,586,000	52.0
Louisiana Gulf	3,281,000	1,836,000	1,445,000	7.8
North Louisiana-Arkansas	471,000	473,000	*2,000	*.4
Rocky Mountains	691,000	709,000	*18,000	*2.6
California	76,430,000	71,099,000	5,331,000	7.3
Total reported	116,003,000	99,584,000		
Estimated total	118,793,000	102,078,000	16,715,000	16.3

*Decrease. A.P.I. weekly reports.

Fuel Oil and Gas Oil

While the attention of the industry generally centers on the gasoline stock situation many refiners are aware that their storage situation in the case of fuel oil and gas oil is equally as important. At the close of January, stocks of these oils were 16,715,000 bbls. larger than a year ago. Last year the increase in the demand for these oils was also as large as in the case of gasoline. The percentage gain in the demand for these oils classed as overhead distillates exceeded that of motor fuels.

During the period of rapid business recovery in 1936 and the first eight months of 1937 there was a heavy industrial and marine demand for residual fuels and many refiners were hard pressed to supply the demands. While the marine demand has held up, due in part to the needs of enlarged navies, the industrial outlets slumped with the start of the recession and


ROCKY MOUNTAINS 691,000 DEC. 2.6%
CALIFORNIA 76,430,000 INC. 7.3%
OKLA.-KANSAS-MO. 3,551,000 INC. 20.7%
INDIANA-ILL.-KY. 6,771,000 INC. 32.7%
APPALACHIAN 1,216,000 INC. 97%
EAST COAST 11,446,000 INC. 35%
NORTH LA.-ARK. 471,000 DEC. .4%
INLAND TEXAS 1,659,000 INC. 16%
LOUISIANA GULF 3,281,000 INC. 7.8%
TEXAS GULF 10,487,000 INC. 52%
THE UNITED STATES TOTAL 118,793,000 INCREASE 16.3 PER CENT

Fuel oil and gas oil stocks now and percentage increase or decrease over year ago. Data in barrels

have not recovered. If this situation continues, refiners will be faced with the necessity of providing for larger fuel oil storage over the next few months. Due to the fact that fuel oil supplies the charging stock for cracking operations there is a direct relationship between the statistical position of that product and gasoline, and excess stocks of one is as much a threat to stable market conditions as the other.

The conclusions to be drawn from these data are obvious. The demand curves for most petroleum products are leveling off after three years of sensational increases.

It is apparent that heavy inventories are not needed, and they have become a bearish factor in markets. Downward adjustments over the next few weeks can correct the stock situation, and the industry can then resume operations on a basis which is in line with 1938 requirements.

TABLE 3—CRUDE OIL RUNS TO STILLS IN THE UNITED STATES†

(Data in barrels)

	1938	1937	Increase	Pct. gain
East Coast	495,500	527,500	*32,000	*6 0
Appalachian	113,500	101,500	12,000	11 8
Indiana, Illinois	426,500	406,000	20,500	5 0
Oklahoma, Kansas, Missouri	258,500	280,000	*21,500	*7 6
Inland Texas	125,500	102,500	23,000	22 4
Texas Gulf	706,500	672,500	34,000	5 0
Louisiana Gulf	138,000	138,500	*500	* 36
North Louisiana-Arkansas	40,000	33,000	7,000	21 2
Rocky Mountains	45,500	44,000	1,500	3 4
California	530,000	487,000	43,000	8 8
Total reported	2,879,500	2,792,500	.....	...
Estimated total	3,195,000	3,025,000	170,000	5 6

*Decrease. †Based on average for two weeks ending January 27, 1938, and two weeks ending January 30, 1937. A.P.I. weekly reports.

TABLE 4—STOCKS OF CRUDE PETROLEUM

(Data in barrels)

	January 23, 1938	January 23, 1937	Increase	Pct. gain
Pennsylvania Grade	4,254,000	4,111,000	143,000	3 5
Other Appalachian	859,000	795,000	64,000	8 1
Lima-N.E. Indiana-Michigan	1,078,000	803,000	275,000	34 2
Illinois-S.W. Indiana	9,477,000	9,583,000	*106,000	*1 1
N. Louisiana and Arkansas	8,011,000	10,459,000	*2,448,000	*30 5
W. Texas and S.E. New Mexico	31,951,000	28,034,000	3,917,000	14 0
East Texas	24,700,000	18,989,000	5,711,000	30 1
Other Mid-Continent†	127,178,000	113,928,000	13,250,000	1 2
Gulf Coast	25,245,000	24,044,000	1,201,000	5 0
Rocky Mountain	23,803,000	25,883,000	*2,080,000	*8 7
California	25,202,000	29,608,000	*4,406,000	*17 4
Foreign	3,466,000	1,874,000	1,592,000	84 9
Total reported weekly	285,224,000	268,111,000	.....	....
Estimate, unreported stocks	19,200,000	17,100,000	2,100,000	....
Total stocks	304,424,000	285,211,000	19,213,000	6 8

*Decrease. †Principally Oklahoma and Kansas.

CULVER CITY AIRPORT

(Continued from Page 15)

have been introduced at a lower point than it occupies at present. Due to the absence of valleys or other topographic depressions in the surrounding country it seems impossible this could have been the case if the gasoline leaked from a pipe line buried 3 or 4 feet deep.

The occurrence of this light material so near the surface is exceptionable only in that it resembles absorption-plant gasoline. Light oil has been found near the surface in several areas where large fields were later discovered. This was true of both Ventura Avenue field and Santa Fe Springs field. In both cases high-gravity oil appeared in water wells.

The most conspicuous case, however, occurred at Wilmington where light oil ranging in gravity between 42 and 60° A.P.I. was discovered at a depth of 22 feet several years ago. This was considered a pipe line leak for some time, but nearly 500 wells were drilled, and the zone yielded a total of about 250,000 bbls. The shallow wells assisted by the seismograph helped to disclose evidences of favorable structure and led to the discovery of the prolific deeper sands.

Conditions in the new gasoline field near Culver City are, of course, very different from those found in the shallow sand at Wilmington. Beside producing a suspiciously good product, the new gasoline field is of small or irregular extent, while the shallow Wilmington sand was productive over a large, fairly-regular area. It is not suspected that a major oil field underlies the rather insignificant gasoline wells, but it is quite certain that at present there are insufficient data to assume that the gasoline escaped from a pipe line.

WESTERN KANSAS

(Continued from Page 17)

wildcat, J. J. Muth No. 1 Conley, C SE section 4-10-35w, in Thomas County, 15 miles southwest of Colby. It had rigged up and was due to spud at last report. The location is about 44 miles east of Colorado and some 55 miles south of Nebraska.

Another outlying test was due to start in Gove County, which is southeast of and touches Thomas County. The Gove wildcat location was announced as Central States Oil Co. No. 1, in section 36-13-26w, 20 miles southeast of Gove and near the Trego County line.

Southern Gray County has a new test at P. G. Reynolds No. 1 Watkins, C SW section 32-28-28w, 2 miles from Montezuma. This is more than 20 miles east of gas production in Haskell County, and nearest oil production is in the Morrison area, Clark County, some 50 miles southeast.

Work has begun at a Finney County outpost at Atlantic Refining Co. No. 1 Nunn, SE NE section 27-21-34w. Nearest production is in the Shallow Water pool more than 6 miles northeast in Scott County, the only oil pool in the far western part of the state.

Two new wildcats were reported in Trego County, where considerable wildcatting is anticipated. These were Martin & Manning No. 1 Lynd, NW SW section 16-11-21w, about 13 miles northeast of Wakeeney, and Central States Oil Co. No. 1 Kinzel, SW cor. section 9-13-22w, about equally distant southeast of Wakeeney.

Deep Graham Test

An Arbuckle lime test for Graham County was due to start at Continental Oil Co. and Cities Service Oil Co. No. 1 Trexler, CEL W half NE section 15-9-21w, northwest of Zurich production in Rooks County and northeast of the Wakeeney pool in Trego County.

Another wildcat, far east of any of these western outposts but also distant from any proven area, was announced for Ottawa County. It was C. E. Babcock and others No. 1 Copeman, C NW NE section 18-10-2w, near Minneapolis. Location is about 45 miles north and slightly east of Carter Oil Co. new wildcat pool opener near Lindsborg, in northern McPherson County.

In addition to these newer tests just getting under way, outlying wildcats are at various stages of drilling in Barber, Clark, Harper, Jewell, Lane, Meade, Phillips and Ness counties.

It is in the counties where discoveries already have been made that the great majority of wildcats will be drilled, however. Foremost among these are Barton, Cowley, Ellis, Ellsworth, McPherson, Reno, Rice, Russell, Sedgwick, Stafford and Sumner counties, where numerous outposts now are being drilled or are projected for later in 1938.

February 24

THE PRODUCTION ISSUE

It's the most notable presentation of production facts ever offered the oil industry.

It brings you a most complete summary of pumping-equipment needs for the entire United States for 1938.

It offers you authoritative discussions on the design, operation, and application of every type of pumping equipment used in the United States; and detailed articles on

Modern pumping units
Field electric generators
Back-side cranking
Pumping-unit foundations
Pumping low-production wells
Modern gas-lift practices
Rod pulling; well cleaning
Metallurgy of pump parts

Plus a dozen other production subjects.

So Don't Miss The Production Issue!

President Interested in Bill to Tax Fuel Oil

WASHINGTON, D. C., Feb. 8.—The competition between fuel oil and coal promises to be a lively issue during the coming months. The bill of Representative Pat Boland of Pennsylvania to place a tax of 1 cent per gallon on fuel oil, pending for years, is receiving considerable support from many members of congress from coal producing districts, and has been specifically endorsed by the United Mine Workers of America. Representatives Boland and Flannery of Pennsylvania who recently urged the ways and means committee to include this tax in the revenue bill announced if this were not done they would offer it as an amendment when the bill is considered on the floor of the house. Accompanied by Senator Guffey, they visited President Roosevelt this week to solicit his support for the tax in the interest of conservation.

President's Memorandum

The president is reported to have expressed interest in the bill in a memorandum sent later to Chairman Doughton of North Carolina of the house ways and means committee and Representative Boland. The memorandum referred to data in an accompanying report on the nation's oil reserves as "somewhat more alarming than I had previously believed."

"For instance," the president said, "present drilled reserves are estimated to be capable of supplying demand only until November, 1941, and to meet expected demand during 20 years to come it would be necessary, in addition to production from known reserves, to discover 28,000,000,000 bbls. of new oil. Such new discoveries would have to be made at a rate of discovery greatly exceeding discoveries made during the last seven years."

Boland's bill would place a tax of 1 cent a gallon on oil used for fuel, except the fuel for internal combustion (diesel) engines and minor exceptions. He estimated it would raise about $168,000,000 a year in federal revenue.

The president's memorandum enclosed an estimate of oil reserves made by the petroleum conservation division of the interior department.

"This is sent to your committee," said the president, "because there has been raised the question of placing a small tax on crude petroleum, not only for the purpose of producing revenue, but also for the purpose of conserving our oil resources, both for the use of industry and for national defense."

Although the president did not urge approval of the bill, Boland said he took "great encouragement" from the memorandum. Referring to the estimate of reserves, he said the oil tax bill would have to be passed "sooner or later."

"This condition is even worse than I thought it was. It's time somebody sat up and took notice."

The Bureau of Mines has considerable data on petroleum reserves and on the extent of competition between fuel oil and coal, and its pending appropriation bill contains increased funds for continuing a study of the competitive fuel situation. Likewise, the National Bituminous Coal Commission has announced a study of the competition between coal and fuel oil, although plans for this study are not yet far advanced.

Incidentally, the coal commission is facing a series of court actions which threaten to interfere with its complicated schedule of minimum prices for coal. Hearings will be held this week and next on a large number of petitions filed with the commission by consumers and producers, principally the railroads, a number of the larger muncipalities, and by the consumers' council, which contain protests that the commission acted arbitrarily and without consideration of all essential facts in issuing its price orders. It is unlikely the commission will be able to satisfy all the complainants as a result of these hearings, and many of the aggrieved parties have already taken steps to seek court injunctions against various prices set by the commission.

Any thought the administration had that New Deal policies are opposed only by executives of big business should be thoroughly dispelled as a result of the conference of about 1,000 small business men here last week.

These little business men, representing all parts of the country and all lines of activity, went vehemently on record as opposing the same aspects of the administration's policy criticized by spokesmen of big business but in much more outspoken terms.

Little Business Critical

If, as some have contended, administration strategists planned to drive a wedge between big business supposed to be antagonistic to the public welfare and little business pictured as supporting the New Deal's social objectives, the plan received a serious setback. Scarcely any administration policy received endorsement, while many of its specific actions were roundly condemned.

Instead of asking more government expenditures to increase mass purchasing power, the little business men demanded a balanced budget, return of relief to the states, and an end to government competition with business. Instead of supporting the administration's "soak the rich" taxes, they demanded repeal of the tax on undistributed corporation profits, modification of the capital gains tax, defeat of the proposed tax on closely held corporations, and careful distinction between legitimate business holding companies and those formed for purposes of tax avoidance.

Only in its attitude toward concentration of wealth and economic power did the little business men's conference agree with a recent administration policy, and this attitude was limited largely to an attack on chain stores, in considerable part engineered by a well-organized group of independent retailers who came to the conference for that purpose. In like manner, the resolution demanding strict enforcement of the antitrust laws was in part engineered by a number of independent oil jobbers. This group, however, failed in an attempt to have the conference go on record against the Interstate Oil Compact, the Connally "hot" oil law, and the Bureau of Mines monthly gasoline forecasts.

Natural Gasoline

Warren's McCampbell Gasoline Plant Nearing Completion

CORPUS CHRISTI, Tex.—Construction of Warren Petroleum Co.'s new gasoline plant in the McCampbell field, near Aransas Pass, is nearing completion and is expected to be in operation shortly after February 15. The plant will have a capacity of 50,000,000 feet of gas daily with a recovery of around 25,000 gallons of gasoline daily.

Natural Gasoline Production In California Shows Gain

Natural gasoline production in California, which gradually but steadily started to increase in 1936 after remaining almost stationary for several years, continued to rise during 1937 and in December amounted to 42,000 bbls. daily according to the Bureau of Mines report for that month. This compares with an average for the year of 40,000 bbls. daily, and the 1936 average of 39,000 bbls. daily. Stocks of natural gasoline at the end of 1937 were 2,001,000 bbls., an increase during the year of 148,000 bbls. and 432,000 bbls. higher than two years ago.

Daily average production of liquefied petroleum gases increased from 2,002 bbls. to 2,097 bbls. during the month, of which 658 bbls. were produced at refineries. Daily average sales increased from 2,080 bbls. to 2,191 bbls. Still gas production during December amounted to 2,144,365,000 feet.

CALIFORNIA NATURAL GASOLINE PLANT OPERATIONS, DECEMBER, 1937

Field—	Gas treated (thou. cu. ft.)	Nat. gasoline produced (gallons)
San Joaquin Valley:		
Elk Hills	56,122	118,855
Kettleman Hills	10,130,218	14,786,452
Midway-Sunset	1,171,784	2,090,006
Mountain View	617,814	675,097
Miscellaneous	5,022,352	3,021,586
Coastal district:		
Elwood	726,139	1,036,220
Rincon	137,835	218,251
Santa Maria	173,633	444,971
Ventura Avenue	3,828,956	5,200,505
Miscellaneous	626,076	542,469
Los Angeles Basin:		
Brea Olinda-Coyote	620,877	1,497,180
Dominguez	2,049,501	2,888,406
Huntington Beach	1,454,057	3,672,693
Inglewood	314,176	514,141
Long Beach	1,571,656	6,825,111
Richfield	241,577	552,411
Rosecrans	438,470	706,826
Santa Fe Springs	2,221,082	5,275,137
Seal Beach	435,803	703,126
Torrance	103,923	232,562
Miscellaneous	1,662,725	3,571,792
Total (all fields)	33,604,776	54,573,797

Permit Granted for Erection Of New Repressuring Plant

FORT WORTH, Tex.—Permit for the erection of a repressuring plant in the Long Lake field, Anderson County, Texas, has been granted Byrd-Frost, Inc., by the Railroad Commission of Texas. The plant will take gas from the company's wells in that field and extract its natural gasoline content before returning the residue to the producing formation.

New Natural Gasoline Plant Planned in North Wyoming

DENVER, Colo.—The Garland Syndicate, composed of H. R. Harriman, Jon Laing and associates, is planning the erection of a natural gasoline plant in the Garland field of northern Wyoming. Plans for construction of the plant were started following the completion of a large gas well in section 10-56n-98w, in the shallow Torchlight sand. The company is planning to drill additional wells and will use residue gas from the proposed plant for repressuring operations.

Refinery Projects

Lube Oil Corp.'s Michigan Refinery Now Operating

SAGINAW, Mich.—Lube Oil Corp., which recently took over the Wolverine refinery at Alma, Mich., has completed remodeling and last week went into operations as a producer of partly finished lubricating oils. Installation of wax-removing equipment is in progress, which will enable the company to produce finished oils suitable for motor lubrication.

Officers of Lube Oil Corp. are: President and general manager, G. F. Chase, Alma; secretary-treasurer, W. K. Graham, Alma; board chairman, R. B. Smith, Grand Rapids; vice president, H. F. Alexander, Grand Rapids.

Richfield Stock Transferred to Consolidated, Cities Service

LOS ANGELES, Calif.—Having completed transfer of its assets to the Richfield Oil Corp., in accordance with the merger-reorganization plan effected in March, 1937, the Rio Grande Oil Co. has been dissolved as a corporate entity. Richfield Oil Corp. stock, obtained and held by Rio Grande in exchange for its physical properties, has been distributed to Consolidated Oil Corp. and Cities Service Co.

With the entire ownership of Rio Grande divided on a 50-50 basis between Consolidated and Cities Service, each company received an equal participation in the distribution of Richfield stock, the amount obtained by each company being 603,511 shares of common stock and 250,000 warrants. Prior to dissolution, Rio Grande paid 25,000 shares of Richfield to George MacDonald as compensation for his services to it in connection with the reorganization-merger of Richfield and Rio Grande.

In making the announcement, company officials pointed out that the dissolution of the Rio Grande Oil Co., which has been a mere holding company since the reorganization, has no bearing upon the operations of Rio Grande, Inc., a wholly owned subsidiary of Richfield.

Work on New Refinery at Pueblo, Colo., Halted

AMARILLO, Tex.—Universal Refineries, Inc., headed by Jack Harris of Amarillo, has shut down construction work on its new refinery being built at Pueblo, Colo., due to inclement weather. The company has acquired a small refinery at Artesia, N. Mex., which was placed in operation about February 7.

New 3,000-Bbl. Vacuum Unit Being Added by Roosevelt

MUSKEGON, Mich.—First units for a new $250,000 vacuum unit to be erected by the Roosevelt Oil Corp. at Mount Pleasant are being delivered by the Muskegon Boiler Works, it was revealed by Paul C. Stevens, vice president of the supply manufacturers. The boiler works is also fabricating vessels, furnace steel, stacks and three bubble towers for the refinery addition.

The vacuum unit will increase the capacity of the Roosevelt refinery by 3,000 bbls. a day and will enable the company to market a new high grade lubricating oil, company officials announced. Equipment for the new unit was designed by D. J. Baize, Roosevelt superintendent.

New Louisiana Refinery Is Under Construction

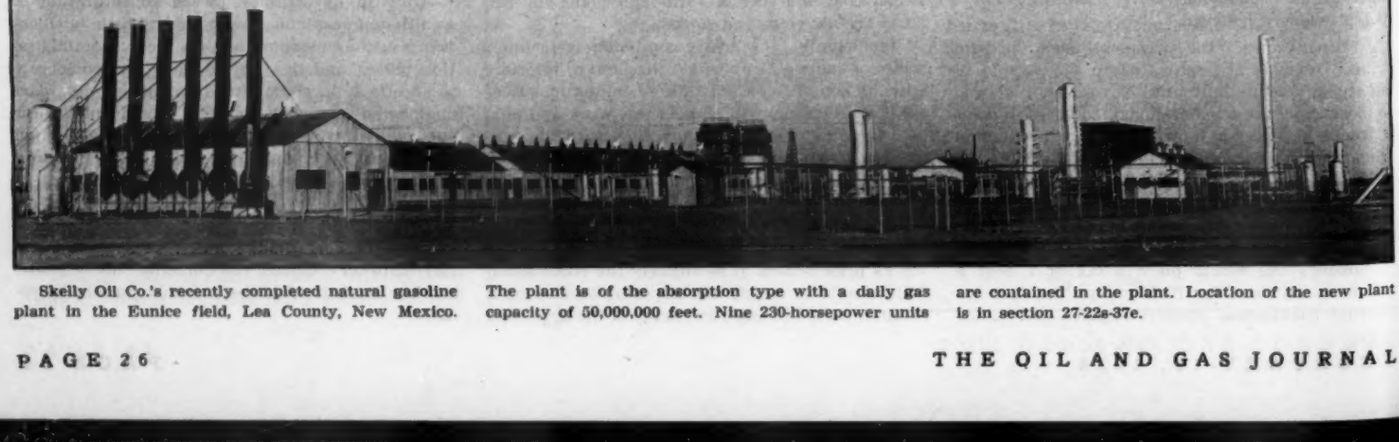
SHREVEPORT, La.—Southwestern Oil & Refining Co., Inc., headed by Harry E. Clark, has started construction of a new 5,000-bbl. skimming plant at Lake Charles, La., on the deep-water ship channel. Work is being done by the company's engineering department under the supervision of I. B. Chittenden, chief engineer. Estimated cost of the plant, which is to operate on local crude, will approximate $100,000 with $150,000 to be spent on terminal facilities. The project is expected to be completed about the middle of May.

Two East Texas Plants Shut Down for Indefinite Period

FORT WORTH, Tex.—McMurrey Refining Co., operating one of the largest refineries in the East Texas field, shut down its plant late last week for an indefinite period. The company discharged 52 employes, advising them to seek work elsewhere. Premier Oil Refining Co. of Texas has also shut down its Willow Springs refinery for an indefinite period.

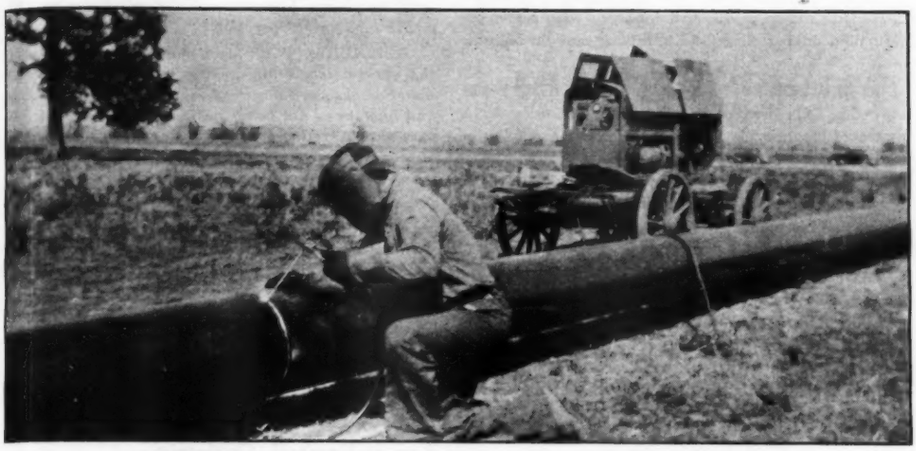
Both refineries have been operating for some time at a rate of 2,500 to 3,000 bbls. daily. Crude capacity of the McMurrey plant is 10,000 bbls. daily, and that of Premier, 4,500 bbls. daily.

SKELLY OIL CO'S. NEW NATURAL GASOLINE PLANT IN EUNICE FIELD, NEW MEXICO



Skelly Oil Co.'s recently completed natural gasoline plant in the Eunice field, Lea County, New Mexico. The plant is of the absorption type with a daily gas capacity of 50,000,000 feet. Nine 230-horsepower units are contained in the plant. Location of the new plant is in section 27-22s-37e.

Pipe Line Activity



UNUSUALLY LARGE PIPE USED IN NEW OIL LINE

Most pipe lines constructed in recent years have utilized pipe of small diameter including 4-inch, 6-inch, and 8-inch. Occasionally lines have been constructed of 10-inch. Rarely has pipe exceeding 12-inch been used in oil lines. The illustration shows one of the largest diameter oil pipe lines ever constructed. It is a new 16-inch line recently completed for Sinclair Refining Co. in the vicinity of Henrietta, Mo. It was laid by Truman-Smith Construction Co. of Eldorado, Kans., utilizing Lincoln electric equipment.

Project for Gas Line From Wyoming to Colorado

DENVER, Colo.—Interest was aroused in Denver this week by an Associated Press dispatch from Casper, Wyo., quoting J. Kirk Baldwin, Wyoming state treasurer, as outlining a plan being promoted for the piping of natural gas from Wyoming into northern Colorado and Denver. No names were mentioned, but references pointed to a proposal to have North Central Gas Co. extend its line from Wheatland to Cheyenne and then through northern Colorado to Denver. This company takes gas from the Big Sand Draw and Muskrat fields in Fremont County, Wyoming, through Casper, Glenrock, Douglas and other towns in central Wyoming into western Nebraska. It has a 10-inch lateral supplying Wheatland, 60 miles north of Cheyenne by air line. Colorado-Wyoming Gas Co., subsidiary of Public Service Co. of Colorado, transports gas from Denver, through northern Colorado to Cheyenne. Officials of that company say they have not heard of the proposed plan. Their gas comes principally from Texas through Colorado Interstate Gas Co. trunk line and partly from the Berthoud dome in northern Colorado.

Magnolia Purchases Site for Orange Grove Booster Station

HOUSTON, Tex.—Magnolia Pipe Line Co. has purchased a site on the F. W. Hillmer farm, 1 mile south of Orange Grove, Tex., upon which it will erect a booster station for its crude oil line from Tilden, McMullen County, to Corpus Christi. Work has begun on the erection of residences for employes.

Commonwealth Buys Imperial Gathering Lines in Allegan

MUSKEGON, Mich.—Purchase of crude oil gathering lines of Imperial Refining Co. of Grand Rapids, Mich., by Commonwealth Pipe Line Co. of Holland, Mich., giving the latter connections with 45 of the 58 producing wells in the Salem Township, Allegan County field, west Michigan, was announced by Gordon F. Van Eenenaam, a director of the Commonwealth company.

Eventual construction of a pipe line to either Holland or Muskegon is contemplated by Commonwealth, Mr. Van Eenenaam said. Tank trucks now move upward of 3,000 bbls. daily to Muskegon refineries or to Holland for shipment to other refining centers of Michigan.

W. A. Hower, former field superintendent of Muskegon Development & Oil Corp., now of Holland, is president of Commonwealth company and F. A. Grimes, of Grand Rapids, former vice president and general manager of Imperial, will become an executive of Commonwealth.

Complete Survey for Line to Vacuum Field, New Mexico

The rapidly expanding Vacuum field of western Lea County, New Mexico, may receive its first pipe line outlet soon. Texas-New Mexico Pipe Line Co. has completed survey for such a line, but no official announcement has been made regarding intent to lay same. In order for this company to serve the pool, only 18 miles of new line from its Lynch pool in southwestern Lea County would be required.

Bell General Transit Co. Files Organization Report

Officers of the Bell General Transit Co., an associate firm of the Bell General Pipe Line Co. of Dallas, Tex., which was organized January 1, are reported in an organization report filed with the Texas Railroad Commission as follows:

Albert Finston, Tulsa, president; Marvin McMurrey, Tyler, vice president; D. D. Irwin, Chicago, vice president; A. H. Meadows, Dallas, secretary; Benedict I. Lubell, Tulsa, treasurer, and M. V. Keeley, Tulsa, assistant secretary and treasurer.

The company is completing a 12-mile spur line in the East Texas field.

Gas for Mount Pleasant, Mich., Through Short Pipe Line

SAGINAW, Mich.—Mount Pleasant, claimant of the title of oil capital of Michigan but a recent sufferer from a gas shortage, appears now on the way to relief from its gas scarcity. The State Public Utilities Commission has granted J. M. Pierce and Paul S. Hughes, who operate Clareco Gas Co., permission to construct a 3½-mile 2-inch pipe line to connect its No. 1 Murphy in Wise Township, Isabella County, with the 4-inch transmission line of Gas Corp. of Michigan, which serves natural gas to Mount Pleasant, Clare and Rosebush. The Murphy well is rated at 560,000 feet per day, open flow. It is the first Clareco well in Wise Township, where drilling is in progress on other locations.

Gas Corp. of Michigan met the emergency created by its gas shortage by "borrowing" 100,000,000 feet of gas from Consumers Power Co.'s Six Lakes field transmission line, which serves Saginaw, Bay City and Midland.

Asks Permit for Pipe Line Across San Jacinto River

HOUSTON, Tex.—American Petroleum Co. of Houston has applied to district army engineers for a permit to place an 8-inch pipe line across the San Jacinto River, about 125 miles downstream from the highway bridge near Crosby.

Gulf Obtaining Right of Way Along Line to the East

Gulf Pipe Line Co. is obtaining right of way paralleling its line from near Jenks, Okla., to points in Ohio and is working in Greene County, Missouri. It is not intended to construct any new line along the route at present or in the immediate future. Purchase of additional right of way was begun in November on the eastern part of the line in Ohio.

The line, a 10-inch system, was constructed in 1930 and had a capacity of 32,000 bbls. a day with pumping stations 55 miles apart. In 1936 the company "looped" the line with 10-inch pipe, increasing the capacity to 42,500 bbls.

Natural Gas

Increase in Chicago Domestic Rates Follows Injunction

CHICAGO.—Peoples Gas Light & Coke Co. has increased gas rates of 800,000 domestic consumers, adding about $3,000,000 annually to its revenue. James A. Cunningham, secretary, made this announcement after Judge Klarkowski had entered a permanent injunction restraining the Illinois Commerce Commission from preventing the increase.

James M. Slattery, chairman of the commission, said there would be an immediate appeal to the Supreme Court of Illinois. Meanwhile the company agreed to impound the rate increase pending final ruling.

The present rates, Judge Klarkowski held, are confiscatory, producing only a profit of 3.3 per cent. He ruled the utility was entitled to at least 6.5 per cent. Under the new rates the company will increase minimum domestic bills from 60 to 90 cents a month, and will add 32 cents to the monthly bills of all other domestic customers. The average household bill is now $2.07.

Texas Railroad Commission Issues Order on Gas Wells

AUSTIN, Tex.—Recycling of gas from the Woodbine horizon in the Long Lake field of Anderson County is permitted under a railroad commission order. Byrd-Frost, Inc., will be allowed to produce not in excess of 25 per cent of the open flow potential of the gas wells in the field, processing the gas for its gasoline content and returning the resultant residue to the horizon through input wells.

The commission also gave notice of hearing for February 23 to consider whether special rules are required to prevent waste in 300 wells which produce high-gravity liquids at high gas liquid ratios and to determine whether they are gas or oil wells. Consideration is in accordance with the new law and the decision of the United States court at Tyler in the Clymore case. If the highly volatile liquids are in a gaseous state the commission must declare them gas wells.

Obituaries

J. W. PICKEREL, oil field worker, Burkburnett, Tex., died from injuries at a burning well in the K.M.A. field.

ROY R. WRIGHT, 33, petroleum engineer with Texas Co., died suddenly at Fort Worth, Tex., February 4.

JAMES F. HAMILTON, 40, Wichita Falls, Tex., rig builder, was killed in a fall from a 70-foot derrick in the K.M.A. field last week.

L. H. ALBERTS, 21, pumper for Bennett Petroleum Co., was drowned while fishing in Norris Lake, north of Graham, Tex., last week.

S. B. RICHMOND, refinery worker at Overton, Tex., died from injuries in an automobile accident near Overton last week.

A. A. BATES, 36, office manager of Amsco Refining Co., Corpus Christi, Tex., died February 1 on a train near Guthrie, Okla.

ARCH E. MERRIAM, 55, Wichita, Kans., oil man and aviation enthusiast, died February 1 at Higgins, Tex. He aided in developing the El Dorado field in Butler County, Kansas, and the Florence pool in Marion County. He formed the Merriam & Addison Drilling Co. in 1916.

ROBERT YOUNG BASKIN, 26, Cameron, La., member of a seismograph crew of Shell Petroleum Corp., died from injuries in a motor accident east of Huntsville.

BOYD WINDER, 34, Saint Jo, Tex., oil field worker, died last week in a Wichita Falls hospital from injuries received in a gasoline explosion.

HOWARD T. ALEXANDER, 70, retired president of H. T. Alexander Oil Co., son of James Henry Alexander, a business associate of the late John D. Rockefeller, died recently in East Orange, N. J. He was born in Oil City, Pa.

ARTHUR W. DUSTON, 52, geologist widely known in the Mid-Continent, died in Tulsa February 2. He was credited with discoveries in the Mason field in Loving County, Texas, and in the Seminoe area, Okahoma.

FRANK SCHNEIDER, about 67, superintendent of the West Texas and New Mexico district of Tide Water Associated Oil Co. at Midland, Tex., died at Little Rock, Ark., recently. He had been associated with Tide Water for 22 years.

GAYLE A. STEELE, 54, president and general manager of Sinclair-Pierce Oil Co., Mexico, died recently of complications which followed an appendectomy. He was a native of Newton, Kans., and had been a resident of Mexico since he was 19. He started with Waters-Pierce Co., predecessor of Sinclair-Pierce Co., as a clerk.

GEORGE H. CANN, 62, San Joaquin Valley, California, division manager of National Supply Co., died January 28 at San Francisco. He was born in Pennsylvania, and joined the company in Kentucky. He was soon transferred to California where he saw service in all fields of the state. He also made three extended trips to the Orient on business. His service record with his company extends over 40 years.

CLYDE O. DEVERSE, 50, district superintendent of Indian Territory Illuminating Oil Co., one of the men who produced the discovery well in the south Oklahoma City field, died February 1 of burns suffered in a well explosion. Since October 25, when Mr. Deverse was trapped by flames from the exploding British American Producing Co.'s No. 1 Elliot, he had been lying beneath a small tent over his bed in the hospital.

JESSE C. WRIGHT, 50, president of Wright Oil Tool Co. of Los Angeles, Calif., died at Bakersfield, February 2. He was known as the inventor of the lead sleeve for weighting drilling bits to aid in drilling straight holes.

JOHN E. GOLDEN, 73, retired president of Tide Water Pipe Co., Ltd., died at Bradford, Pa., February 4. A native of Steubenville, Ohio, he entered the employ of the company at Rixford, Pa., in 1879. He later served as a telegraph operator then became superintendent of construction. He became president of the firm in 1923, succeeding his brother, A. W. Golden.

GEORGE H. BRADLEY, 73, pioneer oil man in southwestern New York, died in his home in Bolivar, N. Y., February 5. He was born in Springboro, Pa., and moved to New York state in 1881. His first employment was as a teamster on an oil lease. At his death he was treasurer of Empire Gas & Fuel Co. and Bradley Producing Co.

Arguments at Madison Set For March 24 by Judge

MADISON, Wis., Feb. 7.—Federal Judge Patrick T. Stone has announced that arguments on motions after verdict on behalf of oil companies convicted here of violating the antitrust act will be heard on March 24.

THE MARKETS*

CRUDE OIL: *Another substantial reduction in daily crude oil production is helping to remove the weak spots in crude markets. It is removing the threat of crude that is backing up on buyers due to the reductions and shutdowns in refinery operations.*

REFINERY: *While there have been no changes in the general levels for tankcar gasoline the "bargain" material has been absorbed in the southwestern states and quotations are being made on a firmer basis. Reductions in refinery operations have also tended to strengthen the markets in several other products.*

TANK-WAGON AND POSTED DEALER: *No general changes.*

FINANCIAL: *Oil stocks move within narrow range with small volume of sales. Average of 30 stocks for week ending February 5: High, 28.31; low, 26.76; close, 27.75. Average for week ending January 29: High, 29.62; low, 27.02; close, 27.25.*

**Detailed information in market section.*

Barnsdall Oil Co. Finds Deeper Pay in Newhall, California

Barnsdall Oil Co. has completed its No. 2 Newhall in Los Angeles County, California, at a depth of 6,712 feet and is producing from 150 feet of solid sand formation, flowing at the rate of 60 bbls. per hour and steadily increasing. This new formation is 300 feet deeper than the formation in No. 1 well, completed 10 months ago.

JERSEY TANKER NAMED FOR R. W. GALLAGHER

Bethlehem Steel Co. Photo

At launching of Standard Oil Co. (New Jersey) tanker R. W. Gallagher, Sparrows Point, Md. S. W. Wademan, vice president, Bethlehem Shipbuilding Corp., Ltd.; R. W. Gallagher, vice president, Standard of New Jersey, and Mrs. Gallagher, sponsor

Unusual interest centered in the launching of the R. W. Gallagher at the Sparrows Point, Md., plant of Bethlehem Shipbuilding Corp., January 22. The tanker built for Standard Oil Co. (New Jersey) is named for the company's vice president and treasurer, R. W. Gallagher, who has charge of Standard Oil's vast natural gas interests. Mrs. Gallagher was the sponsor.

The R. W. Gallagher is the forty-second tanker launched at Sparrows Point and the second of four single-screw 13-knot tankers of 13,000 tons deadweight capacity to be built for Standard Oil at this plant. In addition, this company has ordered three twin-screw, 18-knot tankers of 16,300 deadweight tons capacity.

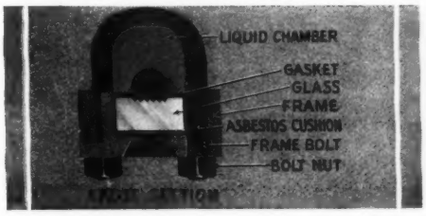
The R. W. Gallagher has an overall length of 463 feet, a moulded breadth of 64 feet, and is designed to carry 106,400 bbls. of oil with pumping capacity adequate to load or unload in less than 12 hours.

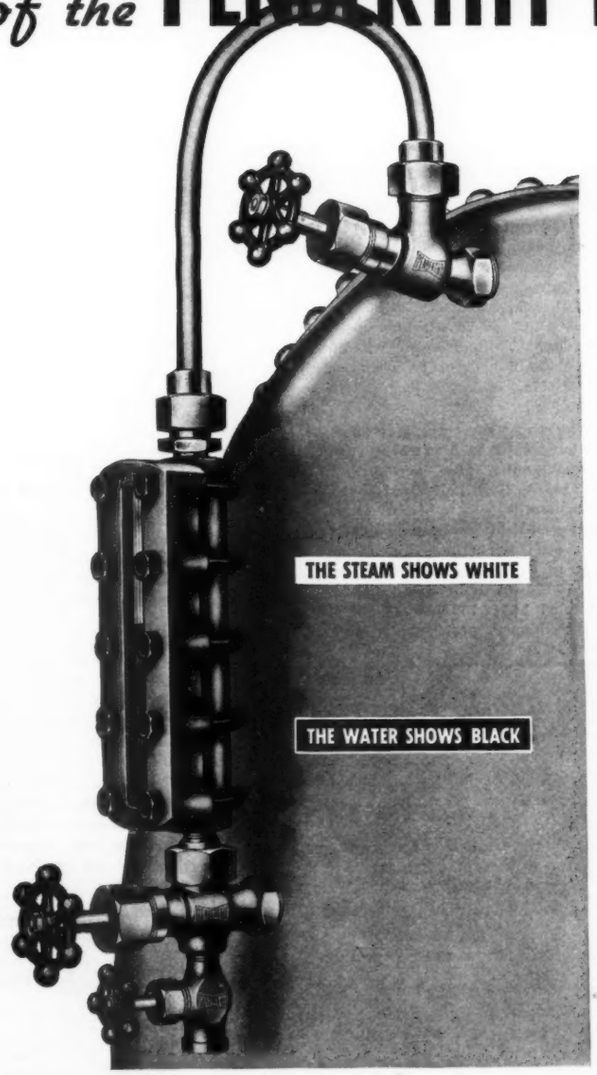
SIMPLICITY

the outstanding feature

of the PENBERTHY REFLEX GAGE

(Licensed under Jarguson Patent)





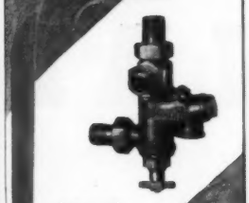
● "It is the most simple gage to service that I have ever seen." This statement is typical of the remarks made throughout the oil fields since the Penberthy Reflex Gage was introduced.

Note particularly the U-Bolt type of construction that is the strongest and the simplest to service. To replace a glass, simply remove the nuts on the face of the gage . . . it is unnecessary to work between the gage and the boiler.

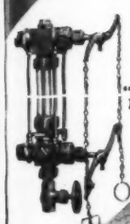
The Penberthy Reflex Gage shown here is available in both Navy Bronze and Malleable Iron; it is recommended for working pressures to 350 lbs. at 450° F. Gage is furnished complete with Penberthy "Dripless" Drain Cock shown.

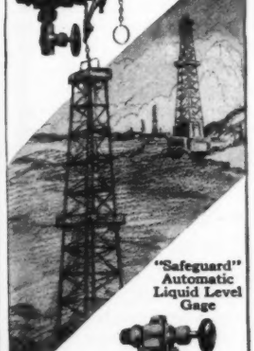
Other Penberthy Reflex Gages are made in any length desired for higher pressures and for various kinds of liquids. Any leading oil well supply distributor will be pleased to quote upon your particular requirements.

PENBERTHY PRODUCTS


Automatic Injector

Ejector, Syphon or Jet Pump


"Navy Type" Liquid Level Gage


"Safeguard" Automatic Liquid Level Gage

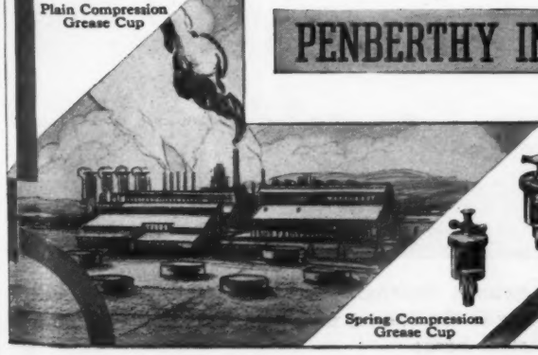
"All-Iron" Automatic Liquid Level Gage

Gas Engine Lubricator

Snap Lever Oiler

Plain Brass Oil Cup

Plain Compression Grease Cup



Screw Plunger Grease Cup

Spring Compression Grease Cup

Automatic Electric Sump Pump

Automatic Cellar Drainer (Water or Steam Operated)

Dipless Air Cock

PENBERTHY INJECTOR COMPANY *Manufacturers of* QUALITY PRODUCTS *Since 1886*
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INTERNATIONAL NEWS

British Imports of Petroleum From United States in 1937

Great Britain used nearly 30,000 bbls. of United States petroleum products daily during 1937, according to preliminary figures on United Kingdom petroleum imports. The United States shipped 10,846,728 bbls. of refined products to Great Britain, an increase of nearly 25 per cent over the preceding year, which totaled 8,421,743 bbls. Despite the increase, the United States continues to supply less than 12.5 per cent of Great Britain's imports, which totaled 88,330,860 bbls., an increase of 4,992,689 bbls. over 1936.

Crude oil imports by Great Britain rose by 3.6 per cent to 15,141,457 bbls., but refined products received gained about 7 per cent, totaling 73,189,400 bbls.

Gasoline is by far the largest item of Great Britain's refined petroleum imports, accounting for 38,748,143 bbls. of the total, an increase of 2,515,485 bbls., or 7 per cent. The per cent gain was much greater in gas oil and distillate fuels, reflecting the trend toward diesel engines in the heavy duty mobile units. Gas oil and distillate fuel imports totaled 4,021,885 bbls., a gain of 29.2 per cent compared to 3,114,828 bbls. in 1936.

Outstanding in the analysis of trade with the United States is Great Britain's continued dependence on this country for its lubricating oil. The United States supplied 2,443,885 bbls. of lubricating oil to Great Britain, which constituted 70.4 per cent of the country's entire requirements. During 1936 the United States supplied just under 70 per cent.

Netherlands West Indies and Venezuela, which for practical purposes may be considered a common source of supply, furnished more than 40 per cent of Great Britain's crude requirements in 1937, whereas the two captured only 34 per cent of the 1936 business. Iraq declined appreciably as a supplier of crude, capturing only 22.3 per cent compared to 28.7 per cent. Peru and Iran also declined, the former falling from 16.1 per cent in 1936 to 14.8 per cent in 1937, while Iran furnished 13.7 per cent against 15.4 per cent in 1936. Rumania continues to supply most of the gas oil and distillate fuels, accounting for 32.4 per cent, but has declined from even greater domination in the past to the advantage of the United States, Iran and Netherlands West Indies. Shipments of gas oil from Iran and Netherlands West Indies to Great Britain nearly doubled their 1936 traffic.

In the accompanying tables is shown the imports by products for 1937 compared with 1936 figures and also the United States' portion of the business.

UNITED KINGDOM IMPORTS
(In 1,000 Imperial gallons)

Products—	1937	1936	Per cent increase or decrease
Crude	529,951	511,745	+ 3.6
Gasoline	1,356,185	1,268,143	+ 7.0
Kerosene	220,511	213,149	+ 4.0
Lubricating oil	121,434	117,943	+ 2.0
Gas oil-distillate	140,766	109,019	+29.2
Fuel oil	705,298	677,525	+ 4.0
Other products	17,435	19,312	— 9.5
Total	3,091,580	2,916,836	+ 5.6

SUPPLIES FROM UNITED STATES
(In 1,000 Imperial gallons)

Products—	1937	1936	1937 per cent of total
Crude oil	.....	2,920	...
Motor fuel	171,692	150,049	12.7
Kerosene	44,499	28,867	20.2
Lubricating oil	85,536	75,141	70.4
Gas oil-distillate	14,401	8,669	10.0
Fuel oil	63,507	31,809	9.1
Other products	.....	226	...
Total	379,635	297,681	

Colombia Production Gains; Output in Peru Slightly Less

Colombian crude oil production in 1937, exclusive of that produced in the Barco Concession and used for fuel in drilling operations, increased about 7 per cent over 1936 and totaled 20,297,846 bbls.

While final figures are not yet available on production in Peru by Lobitos Oilfields, Ltd., not affiliated with the Royal Dutch-Shell group, or by F. G. Piaggio (Zorritos), the estimated 1937 output is 17,319,490 bbls., a drop of 273,519 bbls. compared with 1936.

But for a letup during the final two or three months of the year, the Colombian increase would have been much more substantial. Tropical Oil Co., subsidiary of International Petroleum Co., Ltd., was the only active producer in Colombia in 1937. Colombian Petroleum Co., operator of the Barco Concession, produced an indeterminate amount of crude used for fuel oil purposes in carrying on its drilling program. During the final month, Tropical Oil Co. produced 1,824,956 bbls., or 58,870 bbls. per day. In November, the daily average output was 59,921 bbls. In December, 1936, however, Tropical's production totaled 1,303,646 bbls., indicating the extent to which yield was increased.

During the first several months of 1937, Peru's production was from 5 to 12 per cent higher than in the corresponding 1936 period, but the drop was greater in the last half than the gains during the first six months.

Lobitos Oilfields continued to extend its production in Peru, but International Petroleum Co., the largest operator in the country, failed to equal its 1936 output of 15,126,491 bbls. The company's yield during 1937 totaled 14,722,753 bbls.

A development program for the 28,000 acres of Colombian land owned in fee by the Equatorial Oil Co., which joins the De Mares productive concession on the north is being considered by new owners who obtained control of the Delaware corporation last year.

The Colombia property owned by Equatorial starts at the town of Pedral, near the Magdalena River and extends in an easterly direction along both sides of the Sogamosa River, forming an irregular rectangle some 20 miles long and 3½ miles wide at its broadest section. Northwest of the Equatorial property, Socony-Vacuum has a concession on which exploration work has indicated productive possibilities.

Negotiations are under way by Equatorial for the acquisition of additional territory in a district which is now under investigation. The Equatorial company is proceeding along a line of action looking to promulgation of a satisfactory development contract with several interests which have registered an interest.

C. K. MacFadden of New York is president and managing director of Equatorial. Other officers are: William F. Melhuish, vice president and director; Russell H. Robbins, treasurer and director; Rafael O. Galvan, secretary and director; Clarence A. Weymouth, director and Frances S. Currey, assistant secretary and treasurer.

Iran's 11-Month Oil Production Exceeds All of 1936 Record

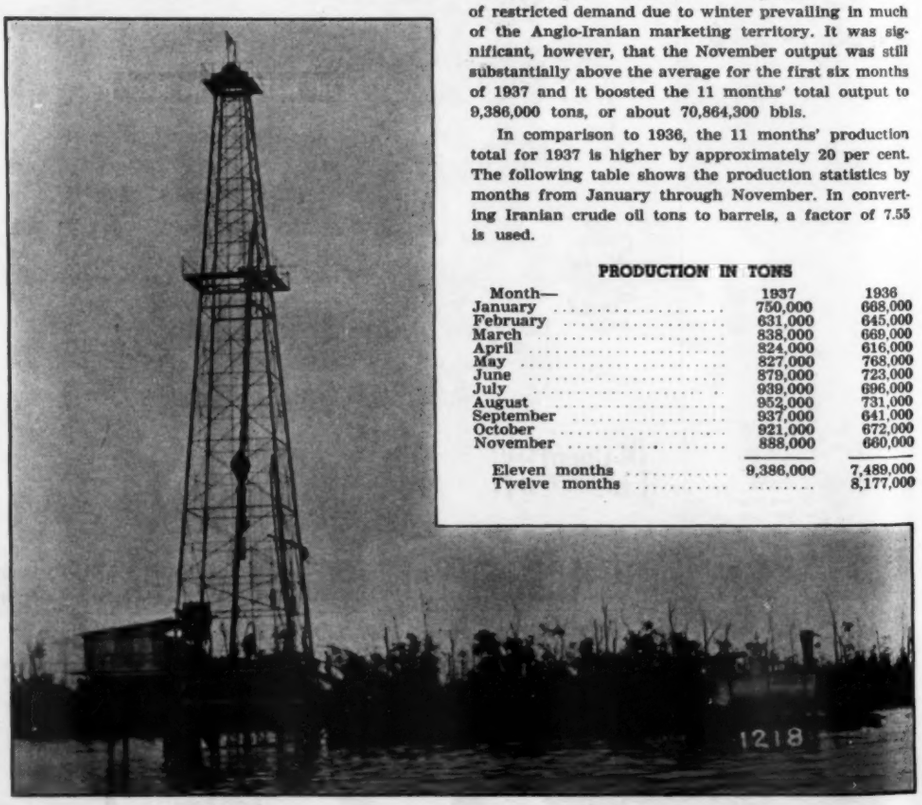
Iranian crude oil production in November dropped to 888,000 tons (about 6,704,400 bbls.), the lowest point in 1937 since June. During July, August, September and October, the monthly yield from Iran exceeded 900,000 tons reaching a peak in August with a new record output of 952,000 tons.

The drop in November was expected as a result of restricted demand due to winter prevailing in much of the Anglo-Iranian marketing territory. It was significant, however, that the November output was still substantially above the average for the first six months of 1937 and it boosted the 11 months' total output to 9,386,000 tons, or about 70,864,300 bbls.

In comparison to 1936, the 11 months' production total for 1937 is higher by approximately 20 per cent. The following table shows the production statistics by months from January through November. In converting Iranian crude oil tons to barrels, a factor of 7.55 is used.

PRODUCTION IN TONS

Month—	1937	1936
January	750,000	668,000
February	631,000	645,000
March	838,000	669,000
April	824,000	616,000
May	827,000	768,000
June	879,000	723,000
July	939,000	696,000
August	952,000	731,000
September	937,000	641,000
October	921,000	672,000
November	888,000	660,000
Eleven months	9,386,000	7,489,000
Twelve months	.....	8,177,000



Drilling rig in typical South American swamp, Pedernales, eastern Venezuela. The derrick is mounted on steel pile foundation with the boilers, mud pumps and mud pit on the steel barge

ENGINEERING and OPERATING

In This Issue

THREE-ZONE PRODUCTION OF SHULER REQUIRES UNUSUAL PRACTICES
By George Weber ..... *Page 32*

Since its discovery in April, 1937, the Shuler field has proven to be a much larger find than was originally supposed. There are now 28 producers in the field with a daily output of about 8,200 bbls. Three horizons have been opened to production, and although the discovery sand is still yielding good producers, all drilling wells at present have as their objective the second or Jones sand. The author gives a complete discussion of drilling and production practices employed in the field as well as a description of its structure and geology.

X-RAY AS AN AID IN INCREASING EFFICIENCY OF WELDING OPERATORS
By O. T. Barnett ..... *Page 39*

Use of x-ray has been of great aid to the manufacturer of welded equipment since it has enabled him to guarantee a perfect weld without having to rely on destructive tests of welded test plates. It has also given him a check on the efficiency of his welders and allowed the correction of faulty welding habits. Here are discussed methods of taking x-rays and of interpreting the radiographs obtained of welded seams. Economics of radiographic inspection are also discussed.

MASS PRODUCTION METHODS USED IN WEST TEXAS SAMPLE CHECK
By Mitchell Tucker ..... *Page 44*

Under the direction of the West Texas Scouting Association, with headquarters in Midland, some 125,000 drill-cut samples are handled weekly from a territory extending over 150,000 square miles. The handling of such a large number of samples required the establishing of a very efficient and systematic procedure of cutting the samples and preparing them for all companies who desire cuts. A representative sample is traced from the well through the cutting depot.

FASTER SIDETRACKING ACHIEVED WITH HARD-FACED MILLS .... *Page 48*

To complete sidetracking of a hole as quickly and inexpensively as possible most drillers have adopted the practice of hard-facing the milling tools to increase its cutting life. A procedure for preparing the milling tool and for applying the wear-resistant alloy is described.

OPERATING IDEAS ..... *Page 37*

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PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 54*

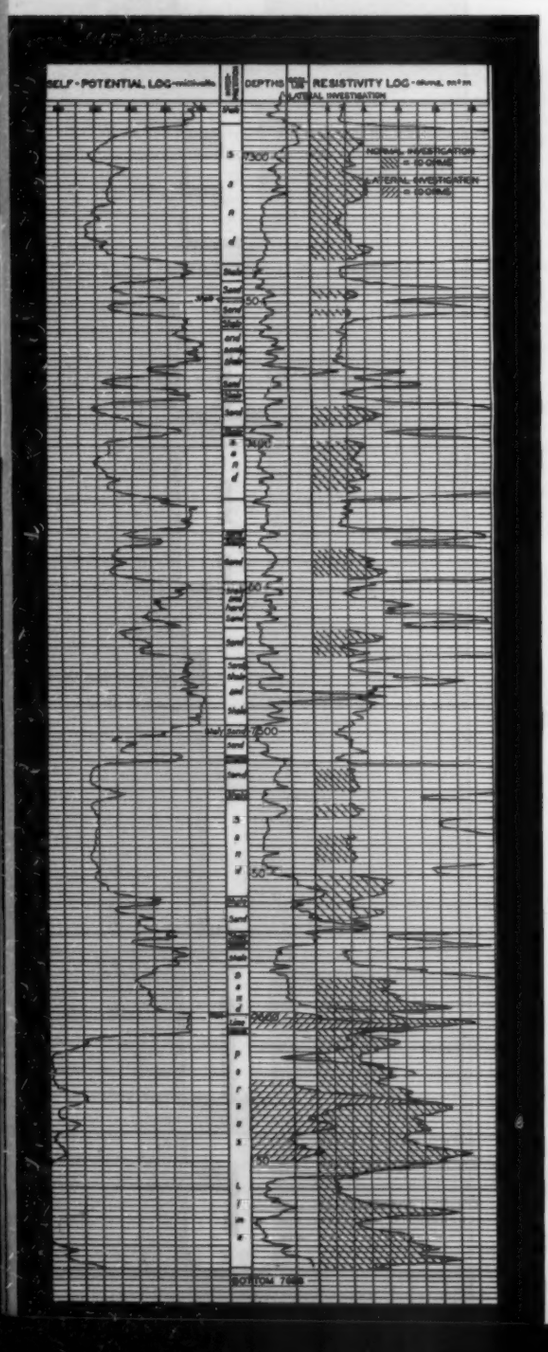
Three-Formation Production of S

Requires Unusual Practices

By

The state of Arkansas is entering what may well prove to be its most important year in the oil industry. With estimated reserves at probably the highest point in history, augmented by considerable activity in wildcat exploration and geophysical surveying, oil companies look to 1938 for greatly increased drilling and production.

Total daily average production of South Arkansas fields at the beginning of 1938 ran just under 50,000 bbls., nearly double the figure at the beginning of 1937. With the increased allowables recently granted to operators in Shuler and Rodessa, the production shows promise of exceeding present totals by about 5,000 bbls. on February 1, when the new ruling took effect.



Portion of electrical log of Lion-Phillips No. 1-A Morgan

Shuler Largest Factor

The focal point of present interest, as well as the principal factor in the state's favorable production outlook is the Shuler field of Union County. Termed a major discovery when it first produced last April, Shuler has since proven a much greater find than was originally supposed, and on present indications alone is considered the most extensive pool to have been discovered thus far in the state.

Three horizons have been opened to production, two of which are in the initial stages of development. In the more important sand of the two, areal limits are as yet unknown, and indications point to extension in possible secondary structures on the flanks of the field proper.

Although the Shuler field was long indicated from subsurface geological knowledge on the area, its discovery took place only last year. On July 30, 1936, the Phillips Petroleum Co. began drilling the wildcat, No. 1-A Edna Morgan, located in section 18-18-17, south of the town of Shuler and about 15 miles southwest of El Dorado. The test was carried to a total depth of 4,270 feet and there abandoned without a show of oil.

Several months later, the Lion Oil Refining Co. took over the abandoned test with the agreement to go 7,700 feet or production. On April 6, 1937, the Lion-Phillips No. 1-A Morgan was completed in sand at 5,556-59 feet as the discovery well of the Shuler field. On a three-quarters inch tubing choke the well made 32 bbls. per hour of sweet crude together with an estimated 9,000,000 feet of gas. The crude gravity rose with an increase in gas-oil ratio, testing 37 degrees on initial gauges, and 49 gravity on later tests.

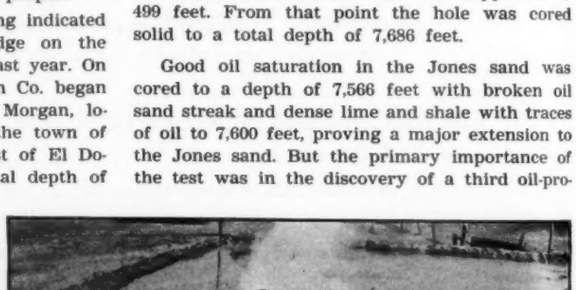
An active drilling campaign followed this completion, but the discovery well, after producing over 42,000 bbls. of crude over a period of several weeks, showed a continuous decline in oil production and finally went to water. Most of the wells completed from the Morgan sands are troubled with water. Three producers are still making pipe line oil from this section, while others make considerable production along with water, including two which still flow in excess of 600 bbls. each of crude daily.

The discovery which was to give Shuler its principal claim to importance, was made six months later. E. M. Jones, drilling the No. 1 Marine Oil Co., in section 17-18-17, found the shallow sands of the field dry, and decided to deepen the hole in search of lower production. The exploratory test topped a sand at 7,554 feet which showed good saturation, and on September 17, 1937, the No. 1 Marine was completed at a total depth of 7,616 feet for the discovery well in what was termed the Jones sand.

The new well indicated the presence of an important reserve, and production tests made on open flow showed a gradual increase until on October 3 the well produced 2,648 bbls. per day. Immediately the attention of operators was directed to this new horizon, and drilling activity shifted from the shallow sands heretofore developed, to the deeper pay.

Meanwhile, in the Lion-Phillips No. 1-A Morgan, which had gone to water in the upper or Morgan sands, the companies decided to deepen the old well to the newly opened Jones sand, and to explore still further below that depth. The old well was re-entered on August 19 and several days later the Jones sand was topped at 7,499 feet. From that point the hole was cored solid to a total depth of 7,686 feet.

Good oil saturation in the Jones sand was cored to a depth of 7,566 feet with broken oil sand streak and dense lime and shale with traces of oil to 7,600 feet, proving a major extension to the Jones sand. But the primary importance of the test was in the discovery of a third oil-producing horizon in the lime below the Jones sand.



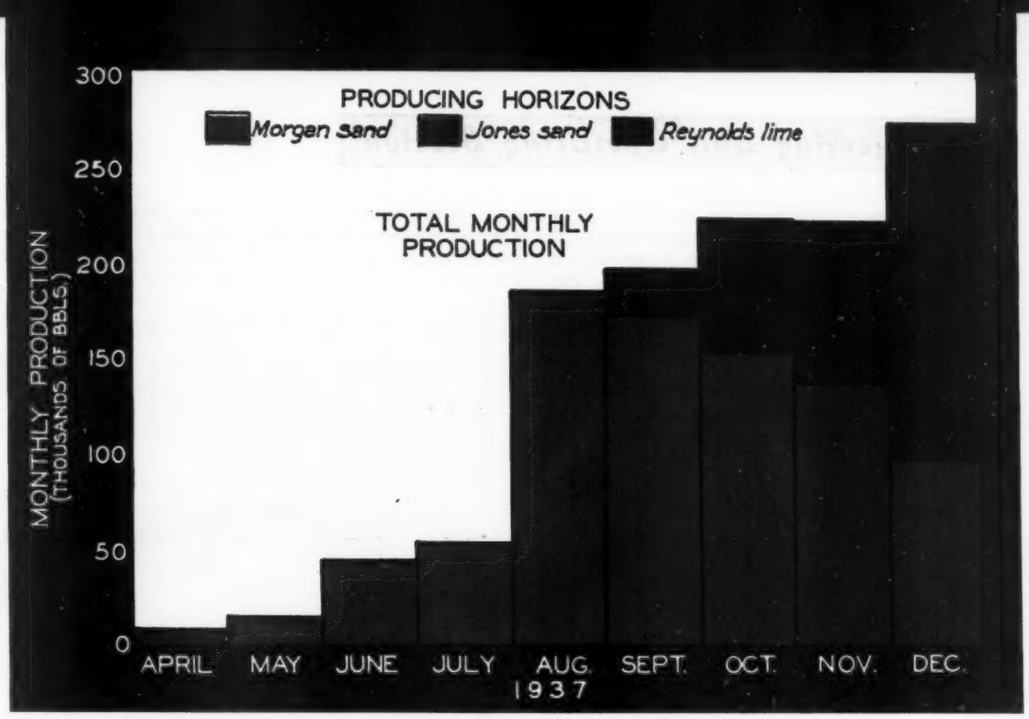
Mud conditioning presents one of the principal problems in drilling in the field. Vibrating screens of the type shown here are standard equipment on all drilling tests, and chemical treatment is required in addition to keep the mud in suitable condition for drilling

After coring hard impermeable shale and lime, a porous oolitic lime was topped at 7,631 feet. In this lime, the deep producer was completed on October 22, 1937, making an initial production of 5,600,000 feet of gas and 208 bbls. of 63-gravity distillate on a 24-hour gauge, through a 3/64-inch choke. Casing pressure was 2,600 pounds. It is estimated that this well has an open flow capacity of 90,000,000 feet of gas. The amount of distillate that it would make if produced wide open is unknown, although it has produced as high as 634 bbls. of distillate on a gas production of 17,587,000 feet daily.

Since discovery of the Jones sand, two major extensions have been made. In the Lion-Phillips

f Shuler

By GEORGE WEBER



Total monthly production from the three producing horizons of the Shuler field

No. 1-A Morgan, which though it was completed in the lime, showed good saturation in the Jones, the pay was extended over 1 mile to the west. A southward extension was also brought in by Lion on the No. 1-A Justiss in section 19.

With the exception of two tests, development at Shuler has consisted entirely in drilling to the Jones sand since that horizon was opened last September. In addition, four wells have been deepened from the shallow horizon to the new sand. The Alice Sydney Oil Co. carried No. 2 Morgan from the Morgan to the Jones sand for a recompletion, as did Lion on the No. 1-A Justiss. Phillips Petroleum Co. deepened No. 1 Gan, which had been previously abandoned at the shallow depth, and made a producer in the Jones sand with the highest initial production yet gauged in the field. The fourth test to be deepened was the lime discovery well.

At the present time a total of 15 wells are producing from the Jones sand, 10 producers flow from the shallow Morgan sand, and the Reynolds lime has one well.

Of the 11 active rigs now in the field, all are drilling for completion in the Jones sand. The outstanding recent development at Shuler has been the completion of the Phillips No. 2 Justiss. The well, located on the northwest edge of production, topped the sand at —7,257 feet subsea, showing it to be the highest well in the field, and proving that the top of the structure lies to the northwest of present development.

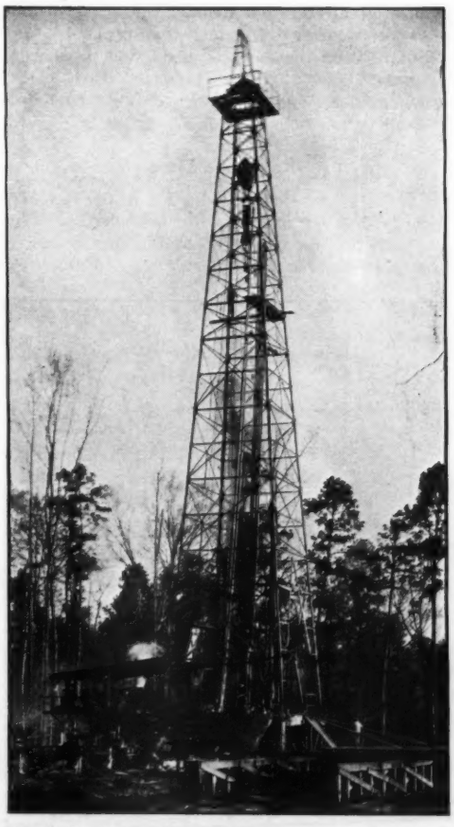
This discovery will bring added activity in the northwest sector of the field, and is expected to have an effect in increased leasing many miles further to the northwest of the present productive edges of the pool. A second important test is getting under way to the southeast of the field. The outpost, Texas Canadian Oil Co. No. 1 Powledge, one-half mile southeast of present limits will be watched with considerable interest by operators in the field.

Field Structure

The structure of the Shuler field is apparently anticlinal, with no evidences of faulting yet indicated. It is believed by some geologists that the structure may be an elongated shoreline trap, extending in a general northwest-southeast direction. The only reliable index of the field structure thus far is obtained from a shooting picture of the top of the Reynolds lime. While contours plotted from that data show good closure and considerable extent, their bearing on the structural characteristics of the Jones sand, immediately above, is interpreted with reservations.

Several interesting factors tend to show that the structure of the Jones sand, at present the most important horizon in the field, does not conform to the top of the lime, and may extend over a greater area than that of the lime. In the first place there is an unconformity between the two horizons. A 140-foot section of red shale and anhydrite which occurs between the Jones sand and the Reynolds lime throughout that section of Arkansas, is missing in the field proper. This section may lens in on the flank of the structure, giving a greater interval between the two pays, and flattening the Jones sand with relation to the Reynolds lime. Further indications support this theory, all of them tending to show that the upper horizon is flatter and will extend over a greater area before marginal production is found at the water level.

The interval between the two sections varies over the extent of present production. Also, the Reynolds lime has shown water in three tests drilled in the southeast section of the field, while water has not yet been discovered in the Jones sand.



Success of the Lion-Phillips No. 1-A Morgan, began considerable drilling activity. It was later deepened to become a second discovery well in the Reynolds lime

Subsurface study of some operators in the field has led them to believe that the field structure flattens out on the southeast, then forms another high in that direction from the field. Present geophysical work on the northwest is being carried out to attempt to determine whether the same is true at the other end of the trend. Although these beliefs are as yet purely theoretical, the good possibilities of production over an extensive main structure and possibly in new highs to the northwest and southeast, enhance the interests of operators in the area.

Another interesting theory concerning the field is that the Jones sand is productive due to secondary accumulation; that migration from the lime has taken place from some point down structure, where the impermeable section between the two horizons is missing. The hypothesis is based on the low gas fraction in the Jones sand, the enormous amount of gas and distillate in the top of the Reynolds lime, and the similar sour characteristics of production in both pays. Such a theory is obviously open to debate in the present development of the field.

The principal markers noted in drilling the area include the following tops:

	Feet
Cretaceous	1,800
Nacatoch	1,950
Glen Rose	3,200
Travis Peak	4,100
Lower Marine	5,400
Reynolds lime	7,600

Average elevation of the field is 230 feet.

The age of the Reynolds lime is open to doubt, but geologists of operating companies in the field agree that it is Lower Mesozoic and not Permian. Absence of fossils precludes definite correlation of the body. The Jones sand is considered to lie in the Lower Travis Peak, which corresponds to the Lower Marine in North Louisiana. It is called by the latter name in many instances. No surface geology was worked on the field, due to the presence of a thick blanket of unconsolidated sands and clays. Such surface beds as are exposed are Cockfield in age.

Shallow Sands

The shallow discovery sand of the Shuler field is in reality a group of thin, lenticular sands occurring from 5,500 to 6,100 feet. In this section, which lies in the upper part of the Lower Travis Peak four such sands have been correlated and others are supposed to exist. Subsequent discovery of the more prolific Jones sand, calling a halt in development of the shallow horizon, has relegated the upper sands to a relatively unimportant position in the field picture. Their pro-

ductive extent is limited on the north, west and south by dry holes and their relative thinness is reflected in the increased water production in most wells still bottomed in that horizon. The principal asset in production at that level is the fact that the crude is sweet, bringing a higher price than the deeper production which contains some sulfur.

Electric logs made of holes in the field, show the presence of several productive sands between 6,100 feet and the top of the Jones sand. None of them have been tested thus far. However, there appears a good possibility for developing additional production, not only in these sands, but also in other sands which may be limited to the flanks of the structure.

The Jones sand, most important by far from the production standpoint in Shuler, is relatively clean, showing fewer shale breaks than the Woodbine sand. Its regularity allows it to be easily correlated as shown in the accompanying Schlumberger log. That log, taken of the Lion No. 1-A Morgan, shows the top of the Jones sand at 7,502 feet with 56 feet of clean sand and 10 feet of tight and shaley broken streaks.

The body of the Jones sand, all of which shows oil saturation in present wells, ranges from 50 to 70 feet in thickness, with the average thickness of 60 feet. It contains some tight streaks of fine silty sand, and the average porosity throughout the body is 17.5 per cent, with a range of from 14.5 to 21 per cent. Porosity in the better section where producers are perforated averages much higher, usually about 18 per cent.

The sand contains very little gas with the oil. The first indication of a gas cap has been recently noted in the three highest wells in the field, Marine No. 2 Justiss, Phillips No. 2 Marks and Phillips No. 2 Justiss. In those three wells, the upper part of the Jones sand carried gas but apparently no oil. Perforations were made, however, so that the wells are producing with low gas-oil ratios. No water sand in the Jones section has been cored, but as nearly as can be determined, from comparison with the lime, the water level will occur about —7,375 feet subsea.

Since the top of the water sand has not yet been determined, and the development to date is entirely on the southeast flank of the structure, no reliable estimates of the probable ultimate extent of productive acreage can be made. That it constitutes a major pool can be seen in the continued flush production of the wells in the sand with no material decrease in surface pressures. Another hindrance to present estimates of probable production is the lack of bottom-hole pressure data. Such surveys are now being made, however, and will continue hereafter periodically, since the new proration measures are based

Lion Oil Refining Co. and Phillips Petroleum Co. No. 1-A Morgan cleaning into pits

50 per cent on that condition. The average bottom-hole pressure in the field, according to late proration schedules is 3,509 pounds.

Although wells in the sand are producing through perforations in only a few feet, all had to be pinched down to relatively small chokes to stay within their former daily allowable of 400 bbls. Effective February 1, however, the allowable production of wells in the Jones sand was placed at 800 bbls. per day.

Prior to placing in effect of allowable production, the greatest amount of oil that any well has actually produced in one day from the Jones sand was 5,354 bbls. through open tubing. Another well flowed at the rate of 256 bbls. per hour through open tubing, and apparently the best well in the field to date flowed 1,216 bbls. daily through a 14/64-inch tubing choke. The amount of oil that these wells would produce on an unrestricted flow through casing is, of course problematical, but it is believed that such production would exceed 20,000 bbls. daily.

Reynolds Lime

Although extent of production in the Reynolds lime is thus far only roughly indicated, performance of the one producer in the pay points to the presence of a large reservoir. Unlike the Jones sand, however, the Reynolds lime has shown water in three tests drilled into it, and definitely limited on the southeast.

In the Lion-Phillips No. 1-A Morgan, good core recoveries taken continuously to a total depth of 7,686 feet showed streaks of porous oolitic lime below the dense lime cap. Permeability ranges from 200 to 2,500 millidarcys and porosity up to 17.5 per cent. The analyses of lime cores from other wells drilled through the section showed permeabilities as high as 11,410 millidarcys and porosities up to 20.2 per cent.

A log of the No. 1-A Morgan follows in part:

	Feet
Dense lime	—7,597 to —7,602
Greenish gray shale	—7,602 to —7,604
Porous oolitic lime	—7,604 to —7,625
Porous and tight lime	—7,625 to —7,628
Tight lime	—7,628 to —7,631
Porous oolitic lime	—7,631 to —7,632
Tight lime	—7,632 to —7,633
Porous oolitic lime	—7,633 to —7,635
Tight lime	—7,635 to —7,638
Porous oolitic lime	—7,638 to —7,646
Tight lime	—7,646 to —7,648
Porous oolitic lime	—7,648 to —7,672

Of the above section, the porous oolitic lime from 7,604-25 feet contained gas only. The porous oolitic lime from 7,625 to 7,651 feet was heavily saturated with 42-gravity oil. The section below 7,651 feet contained water.

In perforating casing for completion, operators purposely shot the upper section where gas sand was cored. Five shots each were made at 7,608-12 feet, 7,616-18 feet and 7,621-25 feet and a 5-foot oil section was perforated at 7,630-35 feet with 20 shots. The gas was desired in the field for drilling purposes and to the Lion refinery in El Dorado.

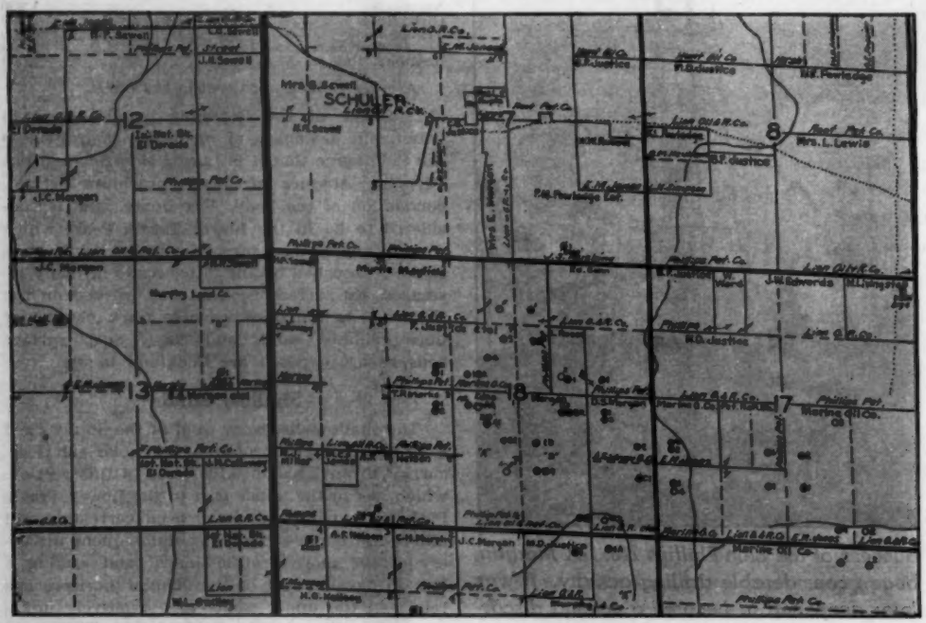
Since completion, the well has produced in excess of 1,000,000,000 feet of gas and 50,000 bbls. of distillate. Casing pressures have declined but 200 pounds during the production; from 2,750 to 2,550 pounds. The original bottom-hole pressure upon completion of the well was 3,550 pounds but no later tests have been made.

Comparative production over a period of 2½ months shows a slight decrease in gas-oil ratio. On October 30, production was 5,600,000 feet of gas and 208 bbls. of distillate; a gas-oil ratio of 26,900 feet per barrel. Production on January 1 was 13,800,000 feet of gas and 585 bbls. of distillate; a gas-oil ratio of 23,600 feet per barrel. The sustained production of such large volumes of gas indicates a vast reservoir in the Reynolds lime.

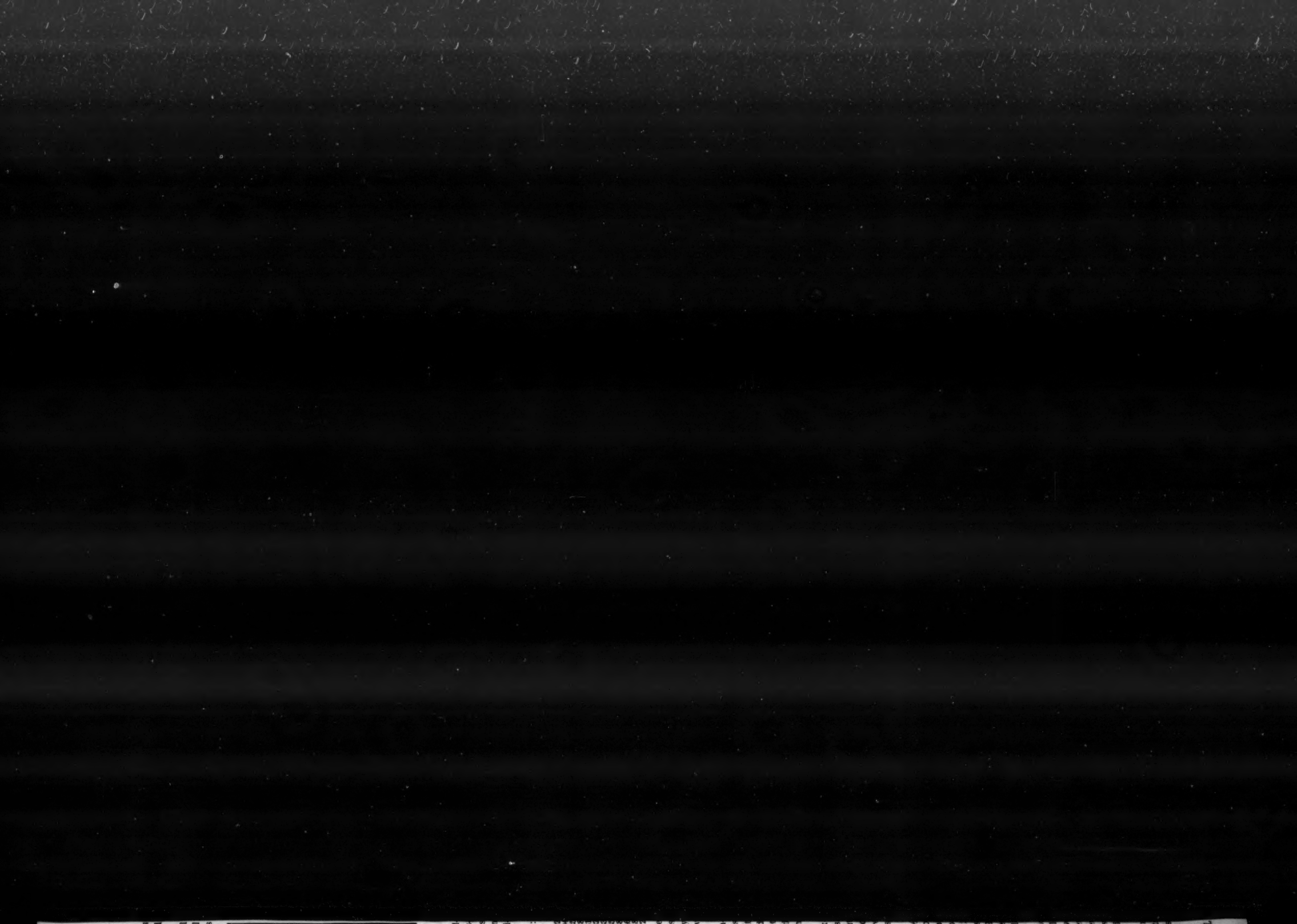
The name given to the lime comes from the same formation which is producing in the Phillips Petroleum Co. No. 1 Reynolds of the Snow Hill field in the Smackover district. The lower sections cored in the discovery well at Shuler showed dense lime with calcite and gypsum crystals. Tight sections of the lime are highly siliceous.

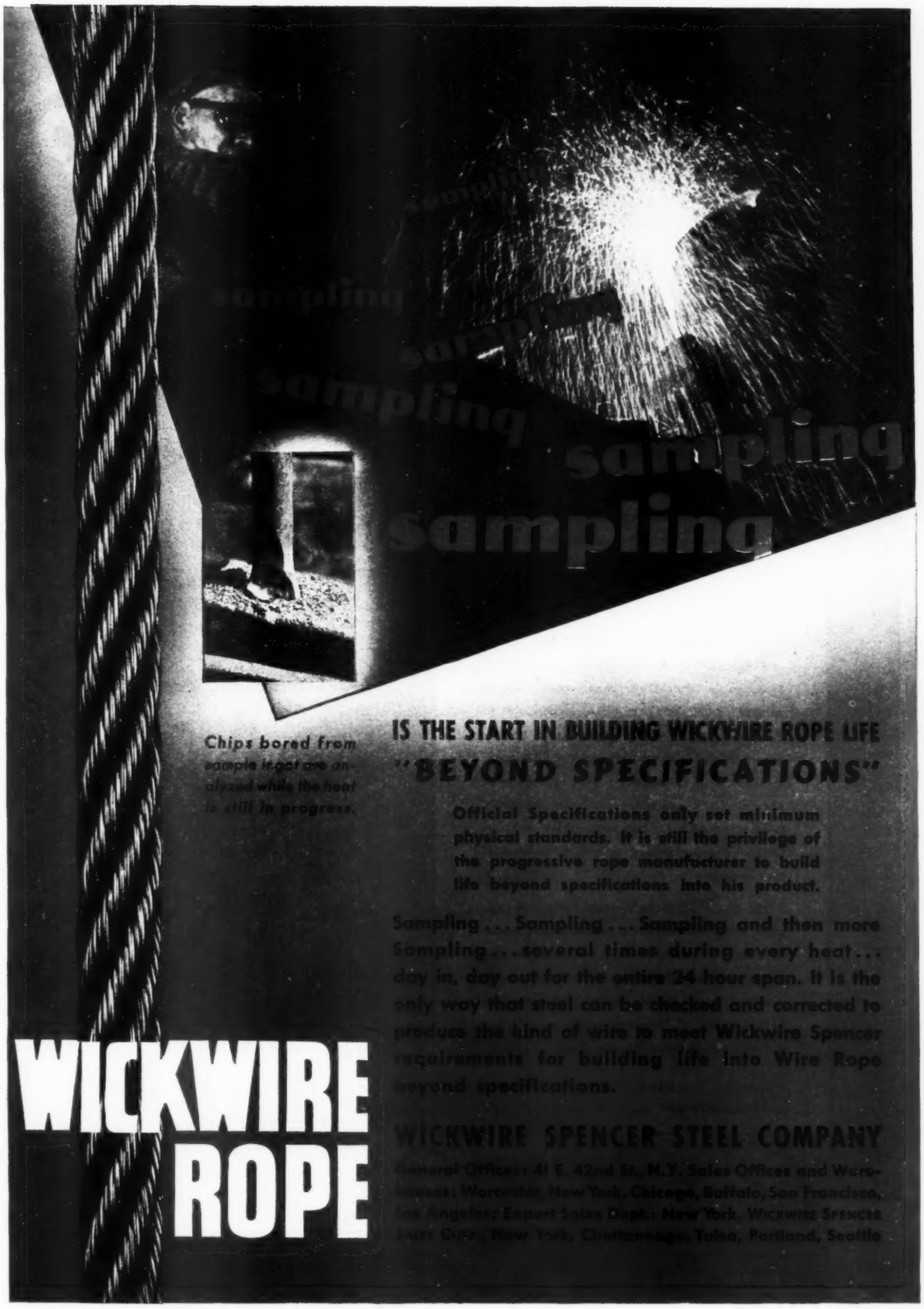
A study of the lime section encountered in other wells drilled in southern Arkansas results in the conclusion that there is an excellent pos-

(Continued on Page 50)



Map of Shuler field, Union County, Ark., showing locations of 26 producers and drilling wells





Chips bored from sample ingot are analyzed while the heat is still in progress.

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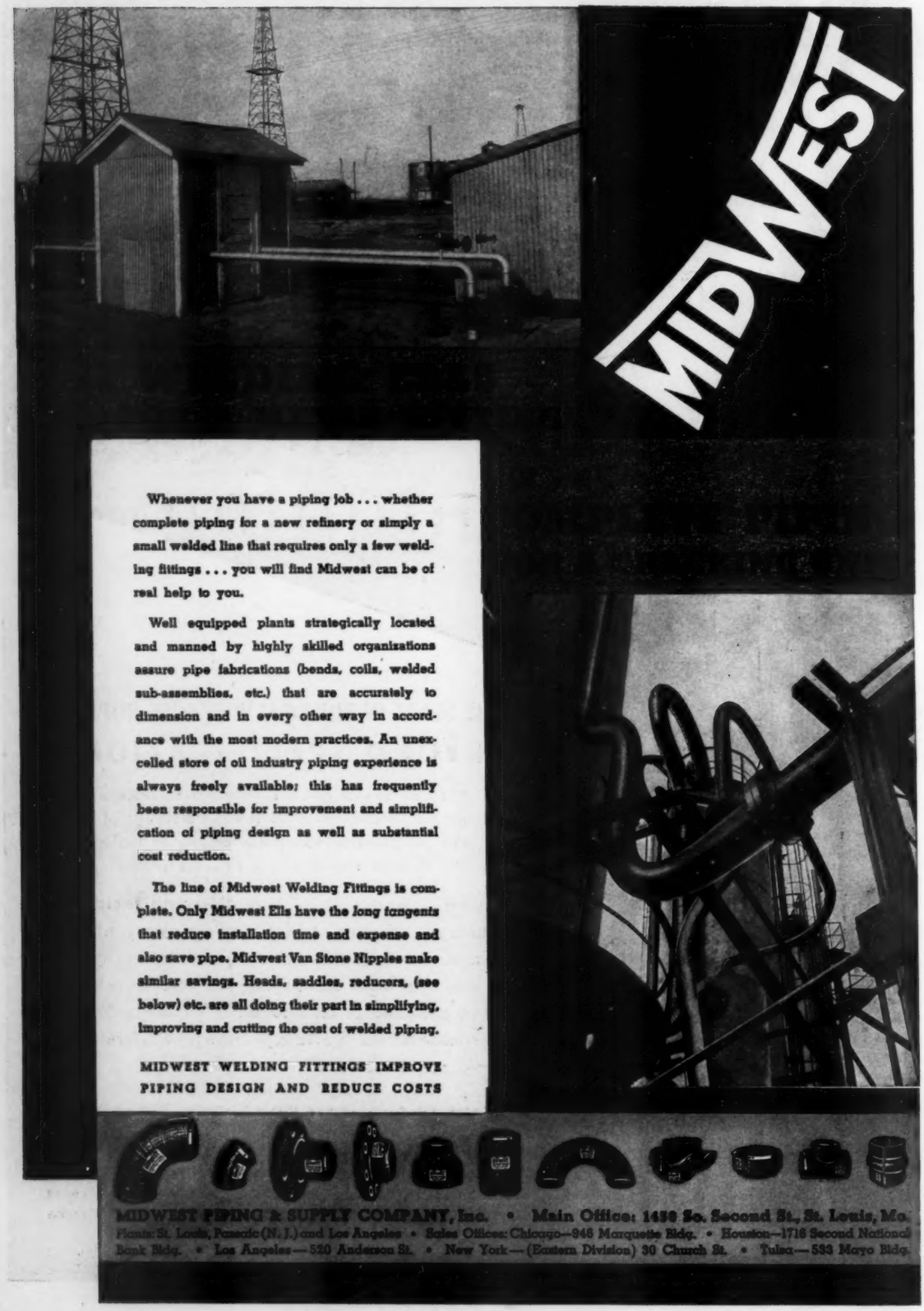
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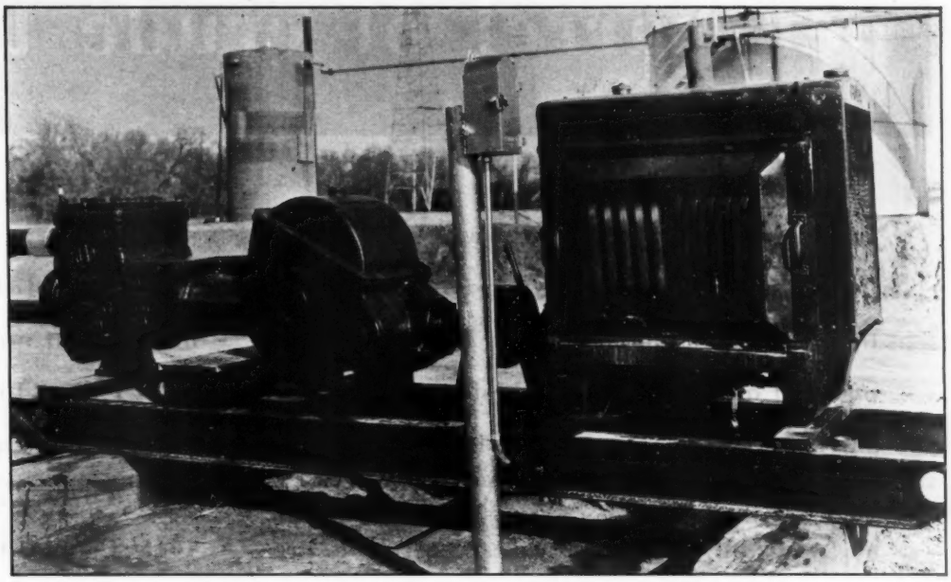
OPERATING IDEAS

Chemical Proportioning Pump

By means of the chemical proportioning pump shown in the accompanying photograph a major oil company operating in the Haven field of Kansas was enabled to pump

chemicals into the crude oil at a central tank battery. The pump is propelled by a rotary turbine operated by natural gas. Enough pressure is held on the tank battery so that vapors from the tanks can be used to operate the turbine at almost any desired speed. A volume chamber was placed in the line between the turbine and the tanks in order to better regulate the pressure of the gas as it is fed into the turbine.



Electric Controller on Gathering Pump

A large pipe line company in the Talco field has equipped its field gathering stations with electric clocks which control the length of time that a unit will be in operation and can be set to start up at any designated time. The clock is run by current from the storage battery of the engine. It requires about four hours to pump off the tanks on some of the leases. The gauger can set the time clock so that it will start up at the desired time, then as he makes his rounds he can gauge the tanks to make sure that everything is functioning properly. In this manner the gauger can look after several leases

Half of Twin-Compressor Used to Pump Well

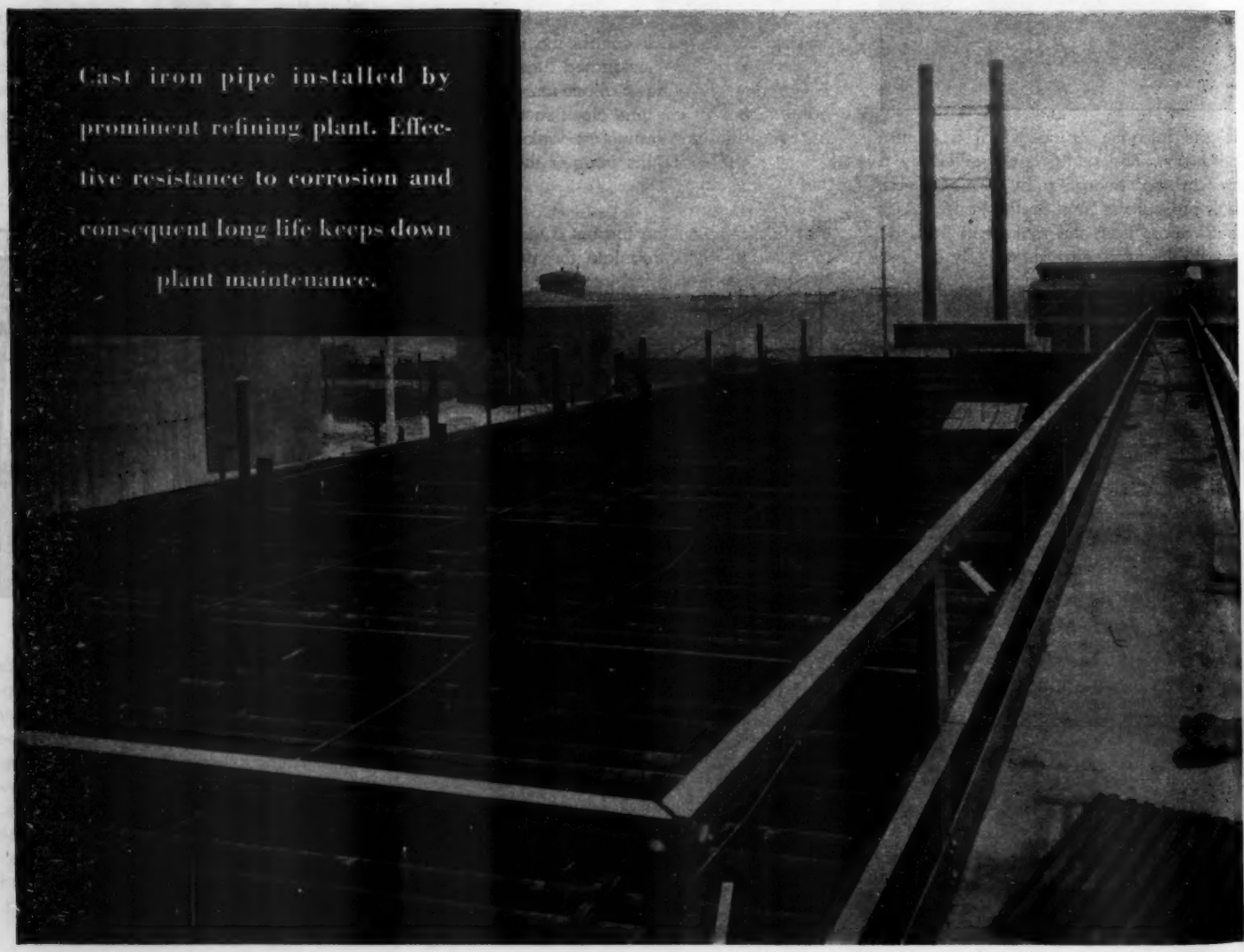
A major operator in the Edmond pool of Oklahoma pumping with pneumatic lifts installed a 200-hp. compressor to handle about three wells. When only one well is pumping the spark-plug of one cylinder is disconnected, thus allowing the compressor to run as a one-cylinder engine with the second cylinder coasting. With the present proration it is common practice to do this as some wells require longer pumping to lift the allowable oil.

Grille for Engine House

Second-hand sucker-rods are used to make an iron-bar door on both sides of this pumping engine house to permit all the cooling air possible to the gasoline engine at the same time the grating keeps children out of danger and prowlers from tampering with the engine. The iron-bar door swings to the inside, and the outside corregated iron doors slide open and shut. Thus when the unit is operating the iron doors may be kept open and when shut down may be closed and locked. This installation is in the Goldsmith field.

LOWER PLANT MAINTENANCE per barrel of crude throughput

Install or replace refinery lines with cast iron pipe and you save frequent expensive replacements that run up maintenance cost. No other low-cost material offers comparable resistance to interior and exterior corrosion. Cast iron pipe, known for long life as a conduit for corrosives, is used by many important refineries. Cast iron pressure pipe is available in bell-and-spigot, plain and threaded ends, and flanged types, or with bottle-tight mechanical joints, in diameters from 1¼ to 84 inches. For further information write to The Cast Iron Pipe Research Association, Thos. F. Wolfe, Research Engineer, 1015 Peoples Gas Building, Chicago, Illinois.



Cast iron pipe installed by prominent refining plant. Effective resistance to corrosion and consequent long life keeps down plant maintenance.

Fig. 1—X-raying the closing seam of a large refinery tower

X-Ray as an Aid in Obtaining More Efficient Welding

By O. T. BARNETT
Black, Sivalls & Bryson, Inc.

Perhaps the largest factor in bringing x-ray methods to the front in the past few years has been the ease with which process control may be established. The x-ray equipment has led to the perfection of welding procedure; has led to the training of operators; and has enabled the manufacturer to obtain constant supervision of operators through this non-destructive testing medium.

Both the A.P.I.-A.S.M.E. and the A.S.M.E. codes recognize the value of radiography in guaranteeing a perfect welded seam. Both of these codes allow an additional 10 per cent joint efficiency where radiographic inspection is employed. In Table 1 is shown a comparison of the two codes utilizing flange and firebox steel as a basis for determining joint efficiencies. From this table, it is obvious that the shell thickness at higher working pressures may be reduced due to the increased joint efficiency allowed because of radiographic inspection of all the seams.

X-raying a test plate for procedure control

Until the advent of x-ray inspection methods, the manufacturer was forced to rely on destructive tests which in no case guaranteed that the seam to which the test plate was attached was as perfect as the test plate itself. In fact, it is common knowledge that a welding operator could work very diligently upon the test plate guaranteeing that the plate would pass all physical tests of the code, while proceeding to be less careful with the actual seam weld the soundness of which, he knew could not be checked. It must be remembered that this is merely a possibility, since our welding operators take a great deal of pride in their work and work to make perfect welds at all times. Certain bad welding habits that led to unfused metal, as well as crater cracks, were not discovered by the destructive test methods. It was not until x-ray films were available that a proper interpretation of faulty welding procedure was possible.

Learning from the defects that put in their appearance in the x-ray film, it was a rather simple matter to make manipulative changes to guarantee sound welds. The next problem was passing on this manipulative information to the welding operators so that they could achieve the results desired. It is an interesting matter of record that these welders learned the slight changes that were necessary to improve the weld to a high standard with very little trouble. It was only the ignorance of what these faults developed in the way of unsound welds that prevented the establishment of proper procedure control before the days of radiography.

After the operators were trained, and had consistently shown their ability to produce x-ray perfect welds day in and day out, it was seen that a further check would be necessary to keep the men operating at the high level that had been established. In those cases where weld routine x-ray examination was made available through the specifications of vessels that required complete x-ray,

TABLE 1—COMPARISON OF CODES

	A.P.I.-A.S.M.E. CODE (factor of safety—4)		A.S.M.E. CODE (factor of safety—5	
	Stress-relieved only	Stress-relieved and x-rayed	Stress-relieved only	Stress-relieved and x-rayed
Flange quality steel	.82	92	.80	90
Firebox quality steel ...	.85	.95	.80	.90

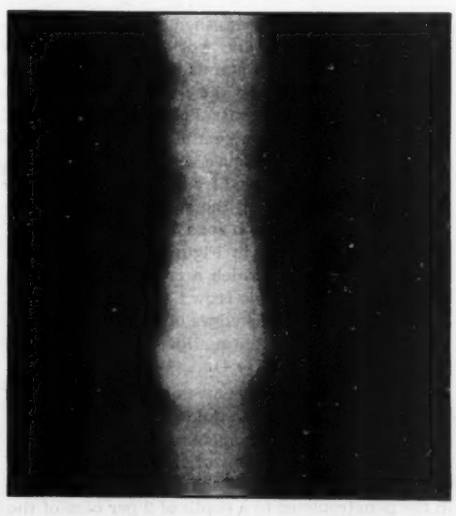


Fig. 2—Weld with overlay bead in place

this supervision was made quite simple. However, in the cases of those vessels that were not subjected to x-ray examination it was felt that the taking of a few random x-ray pictures would have a profound influence on every-day welding. For this reason, it is our custom to take random x-ray pictures of vessels that are not specified subject to radiograph inspection in order not only to keep our welding operators keyed up to the proper quality work, but also to guarantee the soundness of all our welding.

Radiographic equipment consists of both stationary and portable types. These range from 200,000 to 400,000 volts, with the usual milliamperes being 10. Both types of equipment have their advantages with the portable equipment being able to do all of the work that is done by a stationary unit with the added advantage of being useful in moving the x-ray equipment to large, heavy vessels that could not be as easily moved to the x-ray machine.

Although we use the portable unit rather than the stationary unit, it is customary procedure to take small sections or small vessels to the x-ray machine for all radiographic work. Many times it

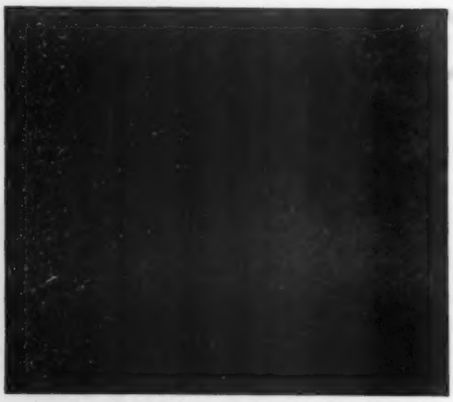


Fig. 3—Weld with overlay bead removed

is advantageous to move the x-ray machine to the work. As has been stated before, in large, heavy vessels, the movement of the machine is far more simple than the transporting of the vessel itself. An example of such a vessel is shown in Figure 1, where the x-ray equipment has been moved alongside the closing seam of a 74-foot vessel in order to make the final seam inspection.

X-ray technique varies with different interpretations of existing codes, as well as the specifications under these codes which have been developed by the various purchasers themselves. In the forefront of all radiographic work specifications developed by purchasers stands the oil industry as a whole. In this industry the types of pictures required fall into three general classifications: First, radiographs made with reinforcement left on the seams (as shown in Figure 2); second, reinforcement completely removed from the seams with the entire picture assuming the same shade for plate and weld allowing fusion zone defects to be readily discerned, (as shown in Figure 3); and third, a weld preparation in which a crown is left in the center of the weld, this crown not to exceed 1/16 inch in height with the edges of the weld featured out into the plate so that no line of demarkation is left (as shown in Figure 4).

Where the reinforcement is left on the seam, a penetrometer is used as a guide to proper exposure technique. These penetrometers are equal in thickness to the reinforcement of the overlay bead on the outside and inside of the seam with slots cut in the penetrometer to a depth of 2 per cent of the thickness of the weld. These penetrometers as specified by the code consist of a series of steps of varying depth requiring that the step corresponding to the thickness of the weld involved be used for check purposes. Due to an optical illusion in which the person viewing the films is enabled to pick up penetrometer markings considerably below 2 per cent, it is generally accepted good practice to have a different set of penetrometers for each thickness of weld with all six of the slots in the penetrometer equal to 2 per cent of the weld thickness. In this manner, the optical illusion effect is eliminated. Where reinforcements are removed from the seams, it is obvious that a different type of penetrometer is required. Here, the thickness of the penetrometer, itself, is 2 per cent of the thickness of the seam with circular holes cut through. The clarity of these holes (as the clarity of the slots in the other type penetrometer) is a guide to exposure technique. A properly exposed radiograph will show the slots or holes very clearly with well defined edges and good contrast between the penetrometer slots and the penetrometer itself.

Size of Weld Defects

In the third possible weld preparation where a crown is left in the center for a check as to the location of the center of the weld, the reinforced type penetrometers are used. Here the penetrometers tend to show whiter than the lightest portion of the seam where the greatest amount of overlay remains. This tends to give the purchaser of radiographic inspection minimum defects as shown by the x-ray below 2 per cent of the thickness of the weld.

Sometimes a doubt is raised in the mind of the one viewing a film as to the actual size of the defect that appears in the radiograph. For purposes of comparison plates have been cut out in sections to correspond with definite locations in x-ray films. In Figure 5 are shown two radiographs with marks denoting the location of defects in corresponding weld cross sections to allow a definite correlation between film and actual defects. In line with this procedure is the beneficial rule of the codes that specifies that all x-ray films must be kept on file by the manufacturer for 10 years. Should any difficulties arise in actual service conditions of x-ray vessels, it would be a simple matter to trace these locations back to the original radiograph in an attempt to learn whether or not a serious defect had

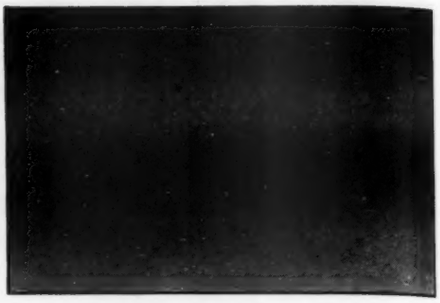


Fig. 4—Weld with crown in center and edges of overlay bead removed

existed in the weld, or whether the trouble had developed from some other source.

The economics of radiographic inspection need some consideration. It is, of course, understandable that the higher the standard of quality demanded by the purchaser, the more expensive is the vessel purchased. There must be some practical point at which a level should be established for x-ray weld quality. This standard, in the writer's opinion should be one that would allow the useful life of the vessel to become the controlling factor for weld quality. That is, there is absolutely no sense in insisting upon a weld that would last for 50 years in a vessel that is certain to become obsolete in from 8 to 10 years or even less.

Since the corrosion resistance of the weld is greater than that of the plate material, there is no point to having a weld good for 50 years in a vessel that is certain to corrode to a point of uselessness in a period of 5 years. In line with this, there is a definite need for a direct operating research with the idea in mind of establishing the level of weld quality necessary in modern construction. Perhaps one definite contributing factor to the lack of establishment of such quality has been the rapid strides with which welding, as an art and a science, has advanced. As rapidly as new codes have been devised and written, even more rapidly has the quality of our routine welding advanced. Standards that were held to be adequate, say 5 years ago, would be considered very poor practice today.

In line with this research program, which should be undertaken by the oil companies with

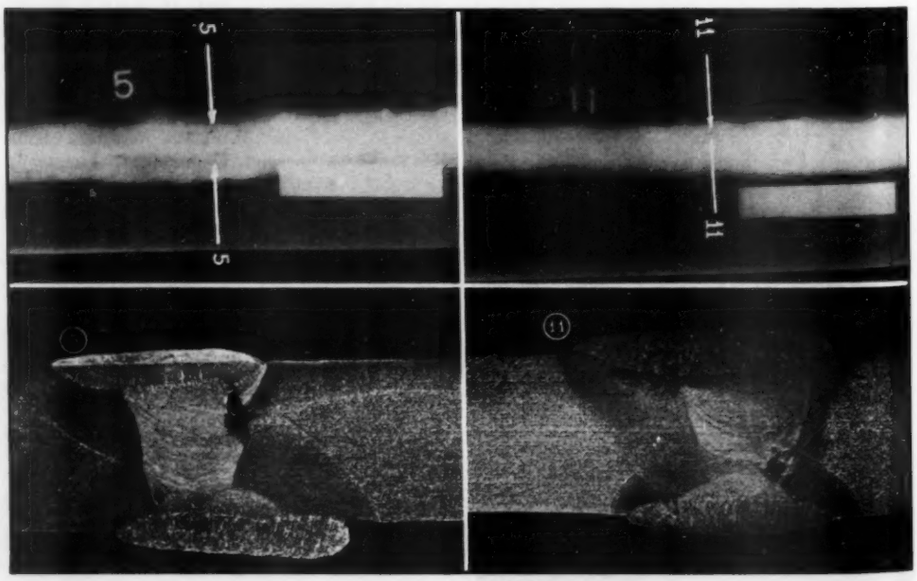


Fig. 5—In the two upper views are shown defective welds caused by slag and gas. In the two lower views are shown the welded cross-sections of the defective weld and slag and gas spots shown above

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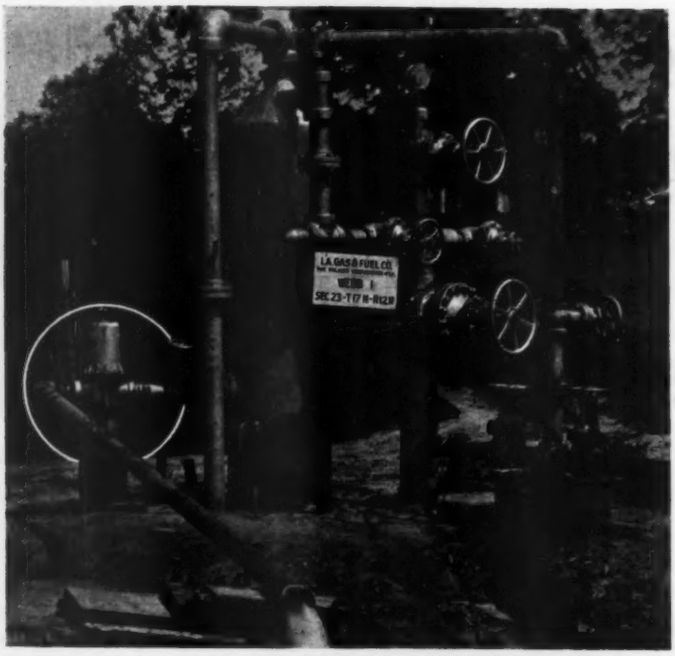

NEW BULLETIN

Copies of this bulletin will be sent to any reader free on request. If you are interested in steam trap applications, ask for a copy of "The Armstrong Steam Trap Book."

THE use of Armstrong Traps for draining gas well separators is only one of several interesting applications described in the new bulletin, "Automatic Drainage for Natural Gas Pipe Lines." The above picture shows a No. 235 compound trap used for this service in Louisiana. This trap is recommended for gas pressures up to 250 lbs. per sq. in. At 250 lbs., it has a continuous discharge capacity of 73,500 lbs. of water per hour. Other standard sizes are available for higher or lower pressures and for larger or smaller capacities. Complete information on request. ARMSTRONG MACHINE WORKS, 868 Maple St., Three Rivers, Mich.

ARMSTRONG TRAPS

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the idea of writing their x-ray specification to the point of good engineering economy, is the need for a study of porosity and its influence on actual service conditions. Where porosities exist near the inner surfaces of the weld in large quantities, a combined corrosion and erosion would take place. Were the same porosities located on the outer portions of the weld, it is quite possible that no harm would result.

Slag inclusions have their effect upon operating conditions of the vessels. Since they tend to be long, narrow inclusions across the direction of maximum stress, it is entirely possible that they might become elongated into cracks or other serious types of failures. But whether or not this is the case is unknown. Slag inclusions may be acceptable from a corrosion standpoint and not acceptable from a standpoint of fatigue as a vessel goes on and off stream with resultant changes in stress distribution.

Cracks, in accordance with general accepted good practice, are not permissible no matter what their size or degree. It is found any cracks will grow across grain boundaries and even across the grains themselves along the cleavage planes until they result in a serious failure. For this reason, not only the purchasers, but also the manufacturers of pressure vessels insist upon freedom from cracks.

At present, the cost of x-ray depends upon two major items: The strictness of interpretation and the type of weld preparation demanded. As far as strictness of interpretation is concerned, this matter has been discussed rather thoroughly before. There is one point that might be mentioned in this connection and that is the need for experienced inspection in radiographic interpretation. As is quite natural, an inexperienced inspector will tend to remove every slight blemish despite the fact that this removal and reweld might result in a less perfect vessel. In an effort to make up for lack of experience, the inspector tends to remove portions of welds that are sound in every respect. This inexperience results in an increased cost for both the manufacturer, and, naturally, ultimately the purchaser. The question of weld preparation for radiography is a matter of the increased cost of removing overlay beads as against the cost of leaving the overlay beads in place. As a general rule, in lighter shells, there is no objection to leaving the overlay beads in place. In these welds, three-fourths-inch or less in thickness, the sensitivity of the x-ray film is such that a defect of the order of 1 per cent of the weld thickness will be clearly shown. Above this thickness, removal of overlay beads tends to show defects more clearly and might, possibly, be a necessity. The increased cost, of course, is that encountered in chipping and grinding the seams for the more expensive types of preparation.

From the manufacturer's viewpoint, the x-ray has been of inestimable value. Procedure control and operator training has resulted in a higher class of work throughout the shop without increasing the cost of welding in proportion to the lessened number of weld defects.

Memorial Fellowship Created at University of Kansas

The George J. Spang Memorial Fellowship has been established in the department of petroleum engineering at the University of Kansas, Lawrence, Kans., according to an announcement by Ivan C. Crawford, dean of the school of engineering and architecture. This fellowship, established by Spang & Co. of Butler, Pa., carries an award of $600 and the research work involved will be under the direction of Dr. Eugene A. Stephenson, chairman of the department. In making the selection of the candidate, preference will be given to graduate students, but applications will be considered from undergraduates suitably qualified by training and experience. Application blanks may be obtained from the dean of the graduate school, University of Kansas, and should be returned by March 1, 1938.

A message to owners of properties which produce

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Mass Production Methods Used in West Texas Sample Check

By MITCHELL TUCKER

The gathering, cutting and distribution of almost 125,000 drill-cut samples weekly from several hundred drilling wells in a territory extending somewhat over 150,000 square miles is obviously a major task. It is being done each week, however, at Midland, Tex., under the direction of the West Texas Scouting Association.

The West Texas check meetings and cooperative sample cutting depot is by far the largest in the industry from the standpoint of mileage covered, wells scouted, and drill samples cut and distributed. Only through the very systematic and efficient "mass production" methods employed could such a large number of individual samples be handled in the one day each week set aside for the purpose.

This "mass production" method represents 10 years of evolution in the handling of samples from the days when each scout visited every well and took his own "pinch" of cuttings on the derrick floor, to the present system. The present organization is the product of this experience plus the hard work of the association and its officers to keep so cooperative a group running smoothly. The 26 companies, with their chief interests in various different parts of the district, had to be coordinated into a unit that met with the satisfaction of all participants.

The West Texas Scouting Association is composed of 41 members from the 26 major operators in the Permian Basin territory of western Texas. A. W. Wyatt, Atlantic Refining Co., has been unanimously elected president each year since its inception seven years ago. James S. Maxwell, Continental Oil Co., is vice president. Alden S. Donnelly, formerly a scout but now district geologist for Honolulu Oil Corp., Ltd., has served as the association's secretary-treasurer and business manager for the last four years.

Their assigned territory extends almost 400 miles north and south from Midland, reaching from the Rio Grande River nearly to Amarillo, and from Abilene to El Paso running east and west. During the year 1937 a total of 2,806 wells were completed in their district, 331 of which were dry, 11 gas wells, and 2,464 oil wells. At the close of the year, 83 wells were rigging up and 366 drilling. Of this number of drilling wells, over 100 were in wildcat or semiproven territory. At their weekly meetings, extending through Wednesdays and Thursdays, a sample check, land check, drilling check, and geophysical check is held.

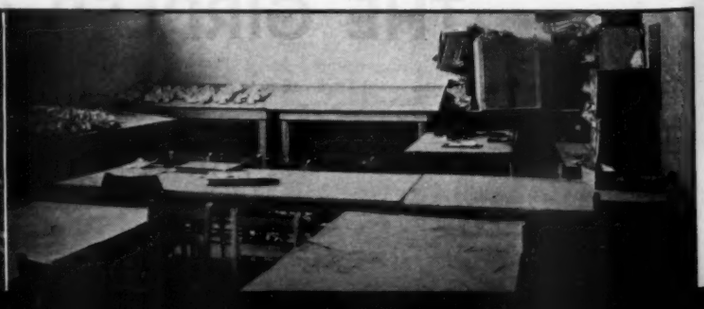
Members of the West Texas Scouts Association (front row, left to right): C. H. Fidler, Tide Water Associated Oil Co.; C. L. Cornelius, Gulf Oil Corp.; Harvey Herd, Standard Oil Co. of Texas; M. M. Slagle, Jr., Texas Pacific Coal & Oil Co.; W. L. Douthit, Magnolia Petroleum Co.; Marshall Sanguinet, Republic Oil Co.; H. W. Pontius, Ohio Oil Co.; Ish McKnight, Jr., Mid-Continent Petroleum Corp.; E. L. Zihlman, Texas Co. Second row: James S. Maxwell, Jr., Continental Oil Co.; John Bricker, Humble Oil & Refining Co.; Glenn Petrick, Stanolind Oil & Gas Co.; Max Engle, Indian Territory Illuminating Oil Co.; Bill Blackman, Barnsdall Oil Co.; Jim Rice, Tide Water Associated Oil Co.; James F. Brannan, Pure Oil Co.; Bill Miller, Superior Oil Co. Third row: A. W. Wyatt, Atlantic Refining Co.; Surce Taylor, University Lands; G. P. Roberson, Sinclair Prairie Oil Co.; Jimmy Meriwether, Shell Petroleum Corp.; O. L. McNew, Amerada Petroleum Corp.; T. G. Fisher, Cities Service Oil Co.; C. M. Chase, Sun Oil Co.; Don Ruth, Skelly Oil Co.; Overton Black, Phillips Petroleum Co. Fourth row: Don Gray, Stanolind Oil & Gas Co.; Bill Means, Sinclair Prairie Oil Co.; Dave Evans, Honolulu Oil Corp., Ltd.; Cooper Hyde, Devonian Oil Co.; S. S. Stinson, Humble Oil & Refining Co.; G. G. Asbury, Atlantic Refining Co.; Dick O'Neil, Shell Petroleum Corp.; and H. B. Dickinson, Sinclair Prairie Oil Co.

In assembling the drill cuttings for the weekly sample check, the scouts assigned to the various territories (31 districts in all) see to it that sufficient cloth sample sacks are provided at each well, and gather the accumulation of samples each week to be brought into the central depot at Midland for distribution to the participating companies. From 1,000 to 2,000 feet is the usual cut in field wells of 4,000-foot depth, but wildcats are cut from the surface to the total depth of the well. The individual sample sacks, properly marked as to the well name, location, and interval of footage samples, are brought in and delivered to the sample room, where the president of the association and his assistants segregate the wildcat wells from the field wells and check to see that each well is correctly named and labeled.

For obvious reasons the field sample cut and the wildcat sample cut are held separately, and under the supervision of two different scouts. Many companies do not require or desire cuts from all the routine field wells, so as the various samples from such wells are brought in, a list is made of all wells that will be "cut" at that weekly check. A few hours before work begins the list is sent to the local geological offices at Midland showing all the field well samples on hand, and the company geologists indicate on the lists the wells from which they desire samples. The lists are returned to the depot before actual cutting begins, so that it will

The sample cutting depot, showing "racking table" and a group of samples which have been brought in just before cutting begins

One end of the sample cutting depot, showing "bagging" tables and shelves where samples are arranged in numerical order



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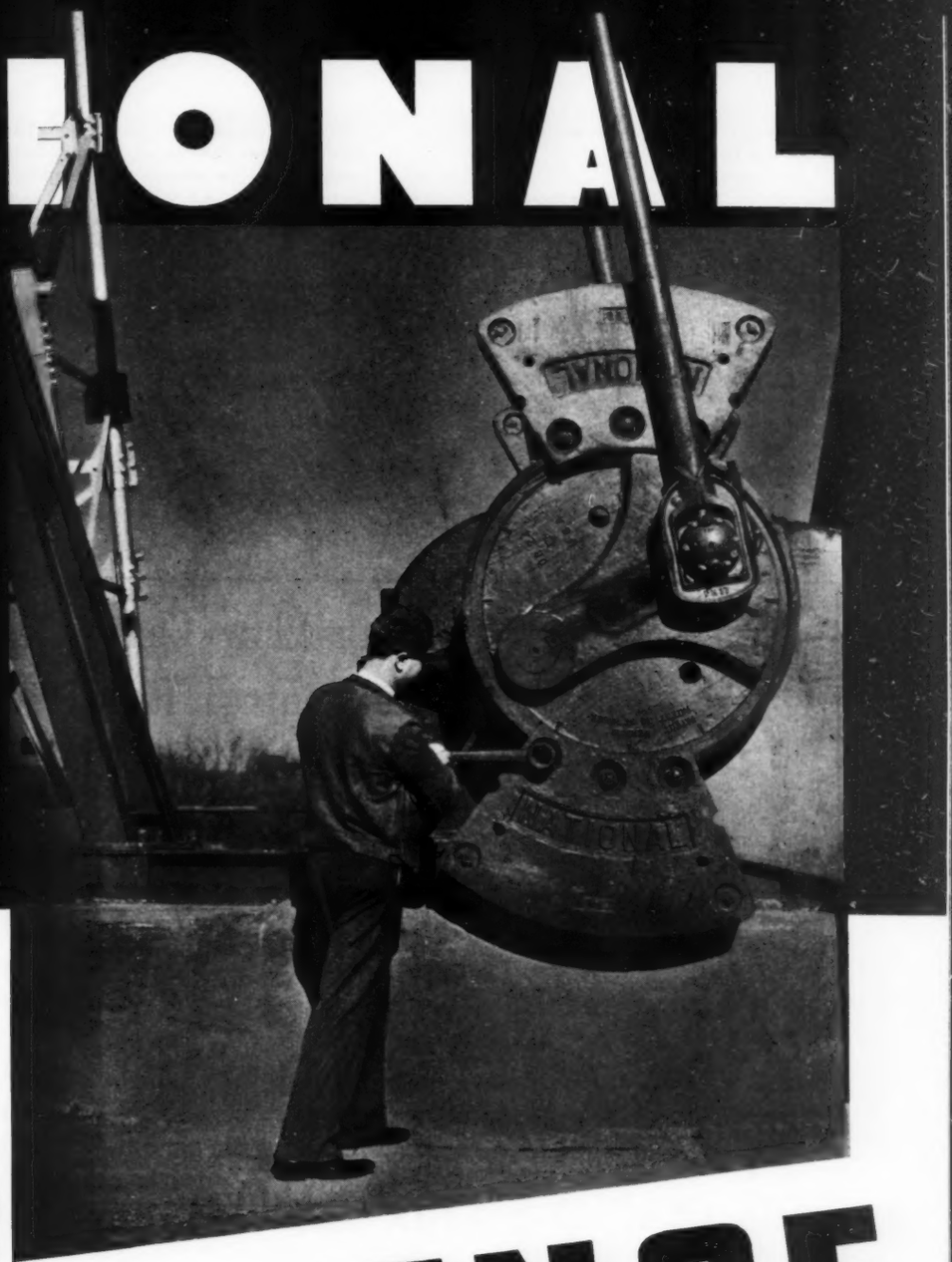

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be known in advance how many samples to cut from each field cloth bag.

An average of from 8 to 12 companies usually ask for cuts from the routine field wells, depending upon their particular interest and holdings in the immediate territory. Of course, all participating companies desire cuts from the important wildcats, and for that reason from 24 to 26 separate cuts are sacked from each of samples brought in. Records for the past few months indicate that samples from an average of about 100 field wells and 40 wildcats have been gathered, cut and distributed weekly. This represents about 125,000 individual samples from both wildcat and field wells in each seven-day period.

The samples pass through seven different stages in this process of mass distribution. Each man has a different and specialized task assigned to him, and after continued practice becomes very proficient and fast in his respective job. Each participating company assigns one or more of its younger employes in the geological department to assist in this work, all of which is done under the direction and supervision of the scouts themselves. Eighteen men are required for the field cut, and 22 for the wildcat cut. The wildcat wells are cut in the daytime, and a different crew of men come to work about 5 p.m. and work into the night as long as necessary to make the entire field well cut. In this way the check is made in 24 hours.

In order to show the systematic and efficient methods which must necessarily be employed to accomplish this task weekly, a representative group of samples from one wildcat well will be traced from the time it arrives at the sample cutting depot until it is delivered to the companies sharing in this cooperative enterprise.

The scout assigned to the territory in which this representative wildcat is drilling brings in 136 sample sacks with drill cuttings throughout an interval from 40 to 1,400 feet, taken at 10-foot intervals on rotaries and every screw on cable tool rigs. Individual cuts are desired by 26 companies from each of these 136 field samples, necessitating that a total of 3,536 samples be sacked, labeled, and distributed from this one well.

A complete book record is kept on each well. When the field samples are brought in an identification card is issued bearing a serial number, as well as the number of individual cuts required from each sample. After being cataloged, the cloth bags are arranged in numerical order upon the sorting table. The first depth must be a continuation from the last depth of the preceding week. Should a gap occur, the scout who brought in the samples is contacted, the missing samples located, or arrangements made to obtain them for the next week. Occasionally, due to "blowouts" or other accidents, it is impossible to fill the gap. While this sorting is being done, a sack marker is stamping 26 small paper bags for each of the depths represented by drill cuttings in the 136 individual samples. The paper bags are definitely marked as to the depth from which cuttings were taken. (Identification as to well is made later).

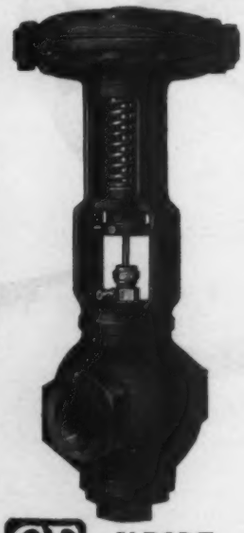
The 26 marked sacks for each of the 136 samples (3,536 in all) are then passed to the bagging table where from three to five men work. Long experience has shown that the quickest and most efficient method of bagging this large number of samples in the short time allotted is for one man to hold the 26 paper sacks below the point where cuttings from the cloth field sack are poured out, and by flipping open the paper bags as they pass under the jetted small stream of cuttings, a "cut" of desired size is placed in each of the paper bags.

The 26 sacks are then handed to the "racker," who places them in a racking table partitioned off just the size to hold the paper bags. One sack from the group of 26 is laid down in each compartment or alley of the rack table in order to separate them by companies. As this process is repeated until completion, each alley contains one each of the small paper sacks of each depth.

While this is going on, a large paper sack is being marked for each company desiring samples from this particular well, showing well name, location, and the total footage interval covered. The first depth must continue from the last depth of samples cut on this well the preceding week, or satisfactory explanation is made. When the total 136 samples have been cut into the 26 separate bags and are racked, the "roller" picks up a complete set of paper bagged cuts in each compartment, rolls them, and wraps them with a strong rubber band. They are then put in the large paper sacks fully labeled, and placed in the respective company bins in the delivery boxes.

One assigned employe delivers all the cuttings to his company's geological department for stratigraphical and paleontological analysis. Either before or after identification, the companies file their cuts of each well in accordance with their own filing and storage system, thus adding to an ever-increasing permanent sample library, each volume of which represents the primary story of the geological formations penetrated by a well whose average cost is about $35,000.

Geologically, West Texas is devoid of surface indications, and geophysical methods of prospecting have been most successful when backed by thorough subsurface work. This fact accounts for the development of the cooperative sample cut at Midland, that resolves itself into almost the equivalent of core drilling the Permian Basin from the grass roots to the productive horizons. All drilling contracts and purchase letters have as one of their prime requirements that samples shall be saved at intervals to be decided upon by the company's geologists, and given to the Midland Oil Scouts' sample cut, or a representative therefrom.



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Note, in the above inset that this coupling is integral with the hose, and that there is no reduction of area. It is field proven, on 9,000-foot wells at 1,000 to 3,000-pound pressures.

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Faster Sidetracking Achieved by Use of Hard-Faced Mills

In the eyes of most oil well drillers the loss of a string of tools in the hole is one of the worst accidents that can happen. If fishing fails, cutting the hole out and around the tools is a troublesome and often a costly operation. Especially when the top of the lost tools is in a rock formation, as is often the case, sidetracking consumes much valuable time and expense.

To reduce such extraneous expense to a minimum, drillers have found it necesary to sidetrack a hole as quickly as possible. To do so they must have mills with long, efficient cutting life. Accordingly, sidetracking mills, like the regular drilling tools, are almost always hard-faced with an extremely wear-resistant alloy.

The usual method employed in sidetracking takes advantage of a steel whipstock about 12 feet long in the shape of a wedge, rounded on one side and concave on the other. This is lowered into the hole with the large end on the bottom. When it comes to rest on the top of the lost string of tools, it is cemented firmly into place. The rounded side of the whipstock fits solidly against the inner wall of the casing. The other side, together with the opposite surface of the casing, forms a tapered conical space into which a milling cutter is rotated. As the rotating mill is lowered, it is gradually forced against the casing. Since the whipstock is of heavy material, it forces the mill to cut its way through the casing and into the open formation.

To minimize the time and money lost in this process, the driller must be sure that his sidetracking mill will stay sharp enough to cut the outside hole after the window is cut in the pipe, without having to be hauled up for replacement or regrinding. To insure that the mills will perform this task, it has become common practice to hard-face the flutes or cutting edges of mills. The hard-facing of a cutter for this service must be done carefully to obtain most economical results. Care and patience on the part of the welding operator, as well as suitable accessory equipment, are almost imperative if the job is to be properly done. The following procedure is one of the methods which has been developed from the experience of a number of veteran welding operators.

New mills coming from the machine shops are prepared for the hard-facing application as shown by the cross-section in Sketch 1, Figure 1. For example, a 7⅞-inch mill is turned to one-half inch smaller diameter than the gauge of the finished mill, or one-quarter inch on each side, so that the same amount is turned off which will be replaced with hard-facing material in the finished mill.

In reconditioning worn mills which have not been hard-faced a copper bar is placed along the face of the flute for its full length and each flute is built up with a high-strength steel welding rod to the full size, shape, and gauge of the finished mill. This gives a solid structure for machining preparatory to the hard-facing application. Care should be exercised to obtain solid weld metal in the corner next to the copper plate; otherwise a crevice may appear on the face at the root of the built-up section.

The mill is then placed in a lathe and turned down to one-half inch under gauge. It is often necessary next to place the mill in a shaper and smooth off the faces of the flutes on both the straight and tapered diameters. The reason for this is that, after building up against the copper plate, the faces of the flutes are often rough and are not straight enough to permit a graphite plate to fit smoothly during the hard-facing operation.

During the actual application of hard-facing material, the mill should be mounted horizontally on rollers to permit easy turning as the work progresses. A graphite plate can be placed in a holder

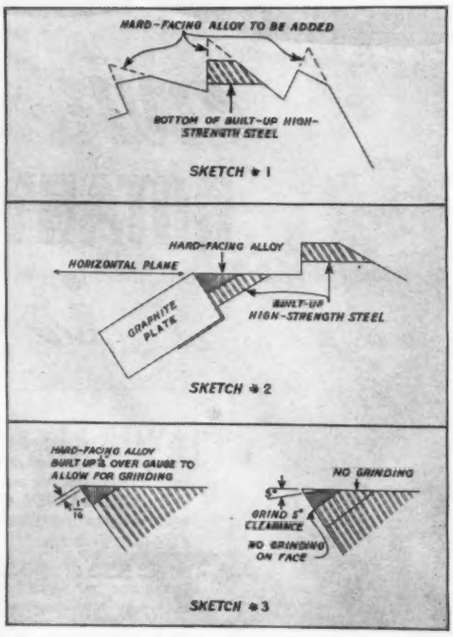

Fig. 1—Detailed sketches of sidetracking milling cutter, preparatory to hard-facing

or fixture so that it is held against the face of the flute with the back of the flute and the top edge of the graphite in a horizontal plane, as shown in Sketch 2, Figure 1. The top surface of the graphite should be at the proper height to hold the hard-facing material flush with the back of the flute and to allow one-sixteenth inch when grinding to the finish size.

While the flutes on the tapered section are being hard-faced, this section should be placed in such a position that each flute to be welded will be in a horizontal plane in each direction. Hard-facing of the flutes on the tapered section of the mill is carried out in the same manner as for those on the straight section. Care must be exercised in applying the hard-facing material in order to have the heat of the puddle extend back to the base of the flute, away from the cutting edge. All flutes should be welded on the straight section first, then on the tapered section. The graphite should be moved along in such a way that a good straight line is maintained along the face of the flute as each flute is hard-faced.

The mills should finally be ground both to gauge diameter and to tapered diameter. Ordinarily this is done with a tool post grinder, in a lathe. After they are removed from the lathe, all that is necessary to complete the mill for service is to grind a slight clearance on the back of the cutting edge, which is about 5 degrees as shown in Sketch 3, Figure 1. It is unnecessary to grind the complete surface of the back of the flute, as this would be wasted effort and would do nothing except improve the looks of the mill. Under no consideration should the face of the flute be ground, as this will destroy the straight surface which must be maintained on the face of the flute if the cost of reservicing is to be kept at a reasonable figure.

When mills are worn considerably under gauge, but not all of the hard-facing material is worn off, it is a simple matter to add more hard-facing alloy in the same manner as described above. On parts of the flute where the hard-facing material is completely worn off, and even some of the parent metal is gone, it is necessary to replace or rebuild the parent metal up to where the base of the surface layer of hard-facing metal should be. Then the flute may be completed by the application of hard-facing alloy. Some of the hard alloy should be melted off at each end of the badly worn section to prevent its mixing with the rebuilt metal. Grinding of reserviced mills is comparatively simple, and follows the same general grinding procedure as used for new mills.

Suitable jigs for holding the mills, as well as the holder for the copper and graphite plates, can be constructed at a very reasonable cost. An important aid in following out this procedure economically is the use of a gas burner placed under the mill, with a shield to keep the heat on only that portion of the mill which is being worked. Such a burner will maintain the heat in the body of the mill during the hard-facing application, speeding up the application and saving considerable oxygen and acetylene. It is important that a graphite plate be used to maintain a straight front edge on the plate next to the hard-facing deposit. A copper or carbon plate is not recommended for this purpose.

The success which this method of application has enjoyed has made it possible not only to sidetrack a string of tools much more easily, but even to mill through tool joints when necessary. Sometimes when a stratum of oil sand is passed through for the chance of finding deeper and better paying sands, no oil is ever found below the first stratum. If a casing has been set past the first sand, it becomes necessary to set a whipstock to guide the milling tool out through the casing at this depth. Also, when a finished casing is accidentally dropped into the hole while starting or removing it, it usually buckes up, and it becomes impossible to get past the end of the casing without a cutting or sinking tool. A milling tool is used to mill off the crushed section. The severe treatment to which these mills are subjected has warranted the application of flute tips of No. 6 Haynes Stellite, not only because they then could cut through almost any obstacle before rehard-facing, but because rehard-facing is such a comparatively easy and inexpensive matter.

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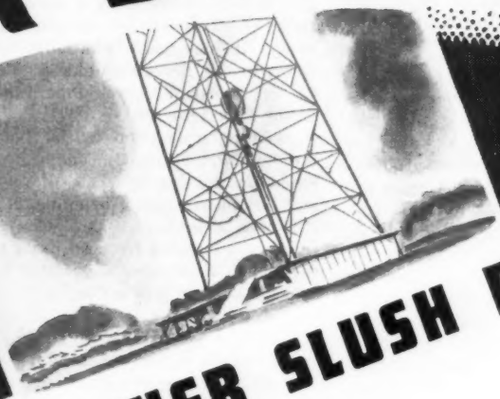

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SHULER FIELD

(Continued from Page 34)

sibility for finding a producing horizon in the same formation below the one which has been developed. Showings have been encountered in a porous oolitic horizon in the lime, occurring some 400 feet below the top of the body. This horizon has not yet been penetrated in the Shuler field.

Heavy Equipment

The depth of production at Shuler requires the use of heavy rigs in developing the field. Drilling is relatively hard and rock bits are now used entirely, with the average Jones producer requiring about 39 bits. The hardest sections are encountered from 7,000 feet to 7,700 feet, and although some of the early drilling to the shallow sand was accomplished with drag bits to the top of the Cretaceous, it is considered easier to use rock bits throughout.

A 10-inch drawworks, 136-foot derrick, two 20-inch by 24-inch mud pumps and three 325-hp. boilers operating at a pressure of 350 pounds, are standard equipment in the field. Drilling time from spudding to turning into the tanks from the Jones sand averages 60 days.

The greatest problem encountered in the field is the conditioning of muds. The thick sand sections traversed in drilling to the pay makes a close check on mud conditions imperative. The use of vibrating screens and chemical treating is universal in the field. Muds are maintained at 10.5 to 10.75 pounds gravity and a viscosity of about 25, using artificial muds of all types. In the few cases when pipe has been stuck in the hole, it was successfully loosened by circulating with oil.

Casing Programs

Sixteen-inch surface or conductor casing is set at 200 feet in all tests. Two casing programs are followed in cementing the 10¾-inch intermediate strings. Some operators cement 1,600 feet to the surface, while two operators have adopted the practice of setting 2,300 feet of mid-string.

Of the 11 Jones sand producers, all but 2 were drilled through the sand and into the top of the lime, where 7-inch casing was set on bottom. All wells have drilled through, and perforated the oil string. Although the Jones sand contains unusually soft sand streaks considering its depth, no trouble is anticipated from wells sanding up. In most cases the top 20 feet of the sand, which averages 60 feet in overall thickness, is perforated and as there is no gas cap perforating at that level presents no problems in later production. While the radial variation in porosity, if any, is not yet determined in the Reynolds lime, the only producer found the oolitic sections sufficiently porous to forego need of acidizing, and its production performance since completion indicates that acidizing will not be required to increase production of the well. However, the variable characteristics of limes in the general area may bring the need for treating in future development.

Gas is now available in sufficient quantity for drilling rigs from the deep Reynolds lime producer. Good boiler water, requiring no treating is plentiful in shallow wells at about 400 feet, and in rainy seasons surface water is utilized. A majority of the wells, after perforating in the Jones sand will kick off and start cleaning, but those which require agitation are successfully started by jetting with small amounts of high-pressure gas.

Three pipe lines serve Shuler and a fourth is now under consideration. The Root Petroleum Co. operates a 6-inch screw line 17 miles in length to its refinery at El Dorado. Lion takes its own production and has begun purchasing other production in February, in a 17-mile 4-inch screw line terminating at the El Dorado plant. In addition Lion maintains an 8-inch welded gas line paralleling the oil line, and serving the refinery with a large volume of gas from the lime producer. The Atlas Pipe Line Co., whose trunk line serving South Arkansas fields is laid near the Shuler field, is planning a spur which will take added production from the pool. As the field develops it may gain additional outlets through spurs to the nearby trunks of the Standard Oil Co. of Louisiana, Texas Pipe Line Co. and Atlantic Pipe Line Co.

Shallow production in the field is taken by the Root Petroleum Co., and the posted price is based on the gravity scale for North Louisiana and Arkansas crudes, bringing $1.22 per barrel. Effective February 1 the price for the Jones crude was reduced from 96 cents to 85 cents by the Lion Oil Refining Co. which will begin purchasing outside production.

Crude Analyses

The sulfur content of the Jones crude appears to vary over the extent of present production, averaging about 1.3 per cent in the southeastern part of the field, and lower in wells to the northwest. A sample of casinghead gasoline taken from one of the Jones producers tested sweet and noncorrosive. Future development of the field, and variations in crude characteristics will be of considerable interest to operators.

ANALYSIS OF JONES CRUDE, SHULER FIELD

Sample from Lion Oil Refining Co. No. 3-B Morgan:

Gravity	32.8	Pourpoint	—20° F.
Flash	atmos.	B.S.&W.	0.2%
Fire	atmos.	Sulfur	1.28%
Vis. @ 50° F.	126	Color	Black
Vis. @ 100° F.	59		

Products—	Yield	Vapor temp.	Gravity	Flash	Fire	Vis. @ 100°F.	Vis. @ 210°F.	Color	P.P.
Gasoline	28%	375° F.	60.1	...	...	..	..	30+	...
Kerosene	14	500	42.8	155° F.	....	..	..	25+	
Gas oil	20	685	30.7	295	330° F.	55	..	straw	+50° F.
Lube dist.	19	830	21.9	460	530	waxy	61	5	+110
Residue	18	(175 Float at 122° F.)			...				
Loss	1								

A.S.T.M. Distillation on Gasoline and Kerosene

Gravity	60.1	42.8
I.B.P., °F.	110	362
10 per cent	173	390
20 per cent	202	404
30 per cent	225	412
40 per cent	247	420
50 per cent	269	429
60 per cent	288	437
70 per cent	306	448
80 per cent	332	460
90 per cent	364	480
95 per cent	386	504
E.P.	405	521
Rec., per cent	98.0	99.0
Doctor	bad	bad
Corrosion	bad	bad
Sulfur, per cent	0.07	0.11
Octane	43	..

The kerosene cut from this crude was treated with 3 pounds of acid, reducing the sulfur from 0.168 per cent to 0.11 per cent and passing the burning test.

ANALYSIS OF REYNOLDS LIME PRODUCTION

Sample: Storage tank of Lion Oil Refining Co. No 1-A Morgan.
Type of distillation: 2,000 cc. Hempel.
Room temperature, 80° F.
Cendenser temperature, 72° F.

Distillate:

Gravity	66.6
Yields:	
Gasoline to 325° F.	61.5%
Kerosene to 500° F.	18.7%
Bottoms	6.9%
Loss	12.9%

	Gasoline	Kerosene
Gravity	66.6	46.4
Flash	...	130
Color	30	30
Doctor and corrosion	pos.	pos.
Initial	106	328
10 per cent	145	349
20 per cent	166	360
30 per cent	179	368
40 per cent	194	378
50 per cent	210	390
60 per cent	226	402
70 per cent	242	416
80 per cent	260	436
90 per cent	288	460
E.P.	354	516
Rec., per cent	98.5	99.0
Octane	52	
T.E.L. to 72 octane per gal. after caustic wash, cc.	2.5	
Bottoms: gravity	29.9	

The distillate from the Reynolds lime runs much lower in sulfur content than the Jones production, averaging 0.086 per cent, which is lower than the government specifications allow for straightrun gasoline. Gas produced from the Reynolds has a sulfur content of .865 per cent.

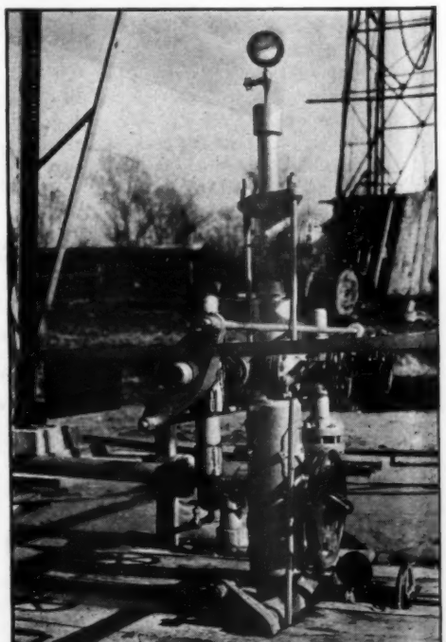
Crude Segregated

The Root Petroleum Co. in the El Dorado refinery is handling the sour crude separately, blending the treated gasoline with that from the sweet Shuler crude, and production of other local fields. At El Dorado, the Lion Oil Refining Co. also segregates the sour crude from other charged to stills, and has successfully handled the crude in a unit converted to process the new charge. The crude is preheated by exchange to 160° F., washed with fresh water to remove salt, then electrically dehydrated. After further heat exchange and passage through the crude furnace, it is flashed at 650° F. to the crude tower where the following straightrun cuts are made:

Product—	Yield	Characteristics
Gasoline	15%	300 E.P. Sulfur, .07%
Naphtha	13%	220 I.P. 410 E.P.
Kerosene	12%	
Gas oil	10%	50 pour
Bottoms	50%	vis. breaker charge

The residue drawn from the bottom of the tower is passed through a viscosity breaker coil of the cracking furnace, and flashed at 875° F. to an evaporator where it is quenched with about 40 per cent of the virgin gas oil stream from the crude tower (4 per cent on basis of crude). Bottoms from the evaporator are charged through the clean recycle coil of the cracking furnace and recycled back to the evaporator.

With this procedure, a 16 per cent yield of cracked gasoline is obtained, together with a 35 per cent yield of cracked fuel oil bottoms. Salable straightrun gas oil with a zero pour is withdrawn from the unit in the crude distillation step, and the



Well-head connections of the type shown here serve most of the wells in the field

remaining 4 per cent is recycled and cracked with the bottoms.

Average sulfur content in the Jones crude consists roughly of one-third mercaptans and two-thirds hydrogen sulfide. However, some samples taken from specific wells show a variation in the form of sulfur present, one showing no hydrogen sulfide, therefore giving a noncorrosive gasoline, and mercaptans present were treated out with 32 pounds of PbO per 1,000 gallons of gasoline.

Reserves

At the present stage of development, approximately 700 acres are actually enclosed by producing wells in the Jones sand. However, available information concerning structure and sand conditions indicates that about 2,000 acres could be conservatively estimated to be semiproven. Furthermore, this information, together with available data regarding structural conditions provided by geophysical surveys indicates strongly that the productive area of the Jones sand will cover at least 6,000 acres. Productive limits have not been defined, nor has the top of the structure yet been reached by producing wells to date, those on the northwest edge being the highest in the field.

On the basis of sand characteristics, reserves in the field expressed in barrels per acre may be represented thus:

$$\frac{\text{avg. sd. thickness, ft.} \times \text{por., \%} \times \text{sat., \%} \times \text{rec., \%} \times 43{,}560 \text{ ft./ac.}}{5.61 \text{ cu. ft./bbl.}}$$

Where: avg. sand thickness = 60 ft.
porosity = 16.5%
saturation = 90.0%
recovery = 45.0%

$$\text{Reserve factor} = \frac{60 \times .165 \times .90 \times .45 \times 43{,}560}{5.61} = 31{,}000 \text{ bbls./ac.}$$

Authoritative estimates based on comparison of the Jones sand with other bodies in older fields place the probable recovery of oil at 500 bbls. per acre-foot, which, with an average sand thickness of 60 feet checks the more detailed method of computing reserve estimates. At the indicated 2,000 acres now semiproven, the total reserves of Shuler might be placed at 60,000,000 bbls. As in most work on estimation of reserves, opinions vary, but the figure derived above is considered conservative in view of recent developments.

It should be noted that the 60,000,000-bbl. figure covers only the Jones sand recovery. Conservative estimates on the other two horizons give the Morgan sands 3,000 bbls. per acre and the Reynolds lime 5,000 bbls. per acre.

Gas Reserves

In addition to the distillate reserves in the Reynolds lime must be considered the reserves of natural gas, which take on great importance in the area where such production is not at present available in large quantities. Aside from the value of the gas as a marketable fuel, its utilization in development of the field as drilling gas and its further use in the field in gas lift as Jones sand production reaches the artificial lift stage, are no small factors for operators to consider.

Although the one producer in the lime cannot with accuracy be used as a base for computing reserves, since it could not conceivably be considered as draining the entire structure, its performance gives a good indication of the extent of gas reserves in the deep pay.

The original bottom-hole pressure or rock pressure was 3,550 pounds as tested upon completion of the well. During the life of the well to date it has produced a total of 1,000,000,000 feet of gas, and the casing pressure has declined 200 pounds. Assuming that the bottom-hole pressure has declined an equal amount, it might now be estimated at 3,350 pounds.

Following the well-known rock pressure-production decline method of computing gas reserves the following values might be assigned to this formula:

$$V = V_p \times \frac{P_2 - P_t}{P_1 - P_2}$$

Where:

V = volume of gas in sand at original pressure.
V_p = volume of gas produced during pressure decline from P_1 to P_2 = 1,000,000,000
P_1 = initial rock pressure of decline = 3,550
P_2 = final rock pressure of decline = 3,350
P_t = pressure in sand at which flow will cease = 100

Then: $V = 1{,}000{,}000{,}000 \times \frac{3{,}350 - 100}{3{,}550 - 3{,}350} =$

16,250,000,000 feet of gas recoverable from the drainage area of the one well. Further development of the structure and measurement of bottom-hole pressures will add to the knowledge of probable gas reserves in the Reynolds lime.

Development of the field is proceeding in orderly fashion, with Jones sand producers being drilled on a 20-acre spacing rule. The field allowable in the Jones sand as set by the Board of Conservation on January 1 allocated each well's production 50 per cent on acreage and 50 per cent on bottom-hole pressure. All wells excepting one are given full allowable rating.

Effective February 1, the board has issued an order doubling the allowable production from the Jones sand, actuated by the increase in demand in additional pipe line outlet. With a daily allowable of 800 bbls. from each of the 15 Jones wells, and production unprorated from the Morgan sand and Reynolds lime wells, Shuler recorded a considerable increase in total production.

Principal lease-holders in the Shuler field are the Lion Oil Refining Co., Phillips Petroleum Co., Marine Oil Co., E. M. Jones, and Alice Sydney Oil Co. Of the 700 acres that are producing, the Lion holds 33 per cent, Phillips 31 per cent, Marine 16 per cent, Jones 15 per cent, and Alice Sydney 5 per cent.

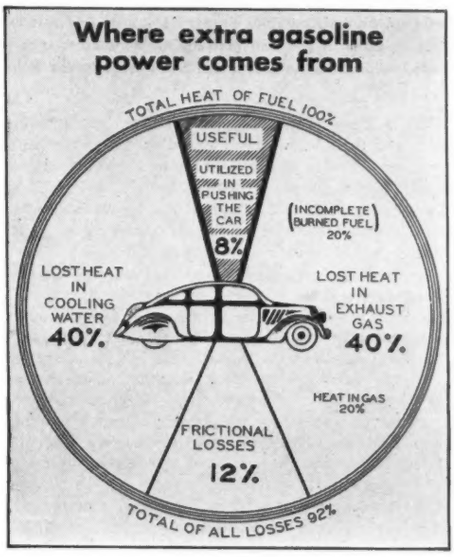
Automotive Clinics Sponsored by Ethyl Gasoline Corp.

A nationwide program of "clinical" education to develop closer working relationships between the oil and automotive industries has been adopted by the Ethyl Gasoline Corp. Portable motor clinics, functioning as an indoor proving ground for automobile performance and fuel efficiency, are traveling throughout the country, mobilizing at regional centers the numerous groups which constitute the two industries in a unique system of visual instruction in the basic principles of automotive transportation.

Thomas Midgley, Jr., discoverer of tetraethyl lead as an antiknock agent, and vice president of Ethyl Corp., made public announcement of the plan at a meeting of executives of automobile companies in Detroit on the afternoon of February 2.

The project, regarded as a forward step in industrial cooperation, which aims to school employe organizations in the interlocking practices of the automotive and oil industries, has taken definite shape, and clinics are already operating in Detroit, New York, Toledo, Little Rock, Ark., Richmond, Va., Oakland, Calif., and Tulsa.

The clinic, which is housed in a theater setting, employs the methods and appurtenances of stage and screen. It consists of 12 tons of equipment specially designed by expert craftsmen in a factory at Los Angeles, where the idea which led to the establishment of the clinic arose. A staff of engineers directs demonstrations and lectures, which, with the aid of motion pictures, constitute an "open sesame" to knowledge of fuels and motors heretofore confined to research laboratories.



A few years ago the average motor car utilized only about 5 per cent of the energy available in gasoline. Improvements in engine design and refining now permit 8 per cent to be utilized. There is still a great quantity of energy now being wasted waiting to be used to supply power

Chief among the apparatus employed in instructing selected groups in the industries is a chassis dynamometer, previously used only as a research tool. Weighing 6,000 pounds, the dynamometer is the only instrument yet devised which demonstrates indoors just what an automobile will do on the highway under road conditions of every kind while the car, powered by different grades of gasoline, is running at varying speeds.

Workers in all branches of industry are enabled to see how gasoline looks as it burns in an engine. A motion picture discloses what takes place in a cylinder when combustion occurs. The pictures were taken at a rate of 5,000 a second through a quartz cylinder head, popularizing the experiment by which General Motors engineers and chemists tracked down the source of knock.

Twenty large screen illustrations depict the progress of fuels and automobiles since the first oil well and horseless carriage. Charts demonstrate that today's low-priced automobiles have more power than the highest-priced automobiles of 12 years ago. Another chart pictures high compression as a landmark in the history of automobiles and fuels, shows how compression ratio is measured, and tells why high compression has been adopted by all automobile manufacturers.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Copper Sulfate as Sweetening Agent For Light Distillates

Several months ago I read a description of a method for sweetening with copper sulfate that had been developed abroad, possibly France. I cannot find this article again so if you can give me a reference to it or a description of the method, it will be of considerable help. —C. H. G.

There have been several articles, appearing in the past six months, which have discussed sweetening methods in which copper was the active agent. There was a paper presented before the World Petroleum Congress in Paris last June that has been reviewed in the Library Bulletin of Abstracts. This was by M. H. Roche, Ingenieur-Chimiste, Pechelbronn, France.

Experiments indicated an effective solution was one containing sodium chloride, 80 grams, and copper sulfate 20 grams, per liter of water. A sweet product was obtained when kerosene was agitated by air with this solution for 10 minutes. The reagent may be used over again many times; no appreciable loss in effectiveness being detected after 20 times.

Color instability of kerosene sweetened by this method has been observed when stored in the presence of iron. This may be corrected by subsequent treatment with sodium sulfide.

An improved method is to treat decolorizing earth with warm copper sulfate—sodium chloride solution, same concentration as above, which is then dried and ground. A good product contained 50 per cent clay, 10 per cent copper sulfate and 40 per cent sodium chloride. Used in the solid form 50 times less is necessary to insure a sweet product and of good color stability. Further advantage of the solid medium is that there is not any metal reaction and no special equipment is required.

Reference: Library Bulletin of Abstracts, 12, 107, 1937. M. H. Roche, The Use of Copper Salts in Refining of Kerosene, Second World Petroleum Congress, Paris, June 14, 1937.

Composition of Deposits Formed in Automobile Combustion Chambers

Has anyone made an analysis of the hard coating found in the combustion space, on pistons, etc., in the automobile engine? If you have an analysis of this material, a copy would be appreciated. I suppose these coatings would vary in composition according to the kind of gasoline used.—T. H. M.

The deposits of carbon, coke, gum, varnish, or whatever name may be used, have been examined by several chemists. The normal deposit found within the combustion chamber is composed of several things. The composition is complex because dust is introduced from the air, picked up from the highway, a coke is produced from the lubricating oil, gum and soot form from the gasoline, and lead may remain from the fuel. Any investigation which is to furnish constructive information regarding the influence of the fuel as a source of deposits, must be made under laboratory conditions.

An interesting study of engine deposits has been made by Gruse and Livingston, of the Mellon Institute of Industrial Research. Their paper contains data that are directly related to your question.

The work was done with a single cylinder engine operated under full load at 1,300 r.p.m. with a crankcase oil temperature of 280° F. During a test run of 45 hours, 30 gallons of gasoline were used. A gasoline containing 35 mg. gum produced a recoverable deposit weighing 1.1 gram, which was hard and dense, resembling a thick film laid on by spray painting. The analysis of this is shown in the table.

COATING FROM COMBUSTION CHAMBER

	Per cent
Carbon	71.5
Hydrogen	5.5
Oxygen (by diff.)	21.0
Ash	2.5
Neutralization No.	41.9
Saponification No.	280.0

The composition of this material agrees very closely with that deposited in the copper dish test for gum. The work reported was done with gasoline containing much more gum that that manufactured by reputable companies.

The authors state that a consumption of 700 gallons a year may mean an introduction into the combustion area of 400 grams, nearly 1 pound, of metallic lead for each 0.5 cc. of tetraethyl lead per gallon. Some of this remains in the engine.

"In earlier days, engine deposits were assumed to be black, as a matter of course, but gray or even white coating are now fairly well-known. They have been observed in both airplane and automotive engines, on piston surfaces and engine heads. Sometimes an engine will give the impression of having been whitewashed inside.

"Analysis indicates a high proportion of lead bromide. A typical example from an overhead-valve engine operated on heavily leaded aviation fuel showed 49 per cent of lead, most of which was present as lead bromide. An iron content of 7 per cent was recognized. Some part of this abnormally high figure may have been due to difficulties in scraping. Sulfates were absent in this case, though they are sometimes reported. So far as known, there is no indication that such deposits, so long as they are held in a coke matrix, are more harmful than other 'carbon' constituents."

References: W. A. Gruse and C. J. Livingstone, Engine Deposits—Causes and Effects. Amer. Soc. Test. Mats., 1937. D. P. Barnard, J. O. Eisinger and O. Fitzsimons, Factors Controlling Engine-Carbon Formation, J. Soc. Auto Engrs., 29, 215, 1931.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

CHEMICALS FOR THE PETROLEUM INDUSTRY

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Sold in various forms; powder, extract and solutions. The extract, sold as tannin extract or quebracho, contains about 72 per cent tannin. The specific gravity of a 10 per cent solution is 1.0406 and 20 per cent is 1.0824.

Composition of Gas From Cracking Stills for Polymerization

Could you furnish an analysis showing the hydrocarbon content of the gas formed when cracking oil, which is used for polymerization treatment? I suppose this might vary to some extent but a general average will serve our purpose very well.—R. V. P.

The composition of gas from cracking was shown in the A.P.I. paper by Egloff, Morrell and Nelson. The material here is arranged from this article.

The composition of the rich gas from the cracking unit is shown in Table 1.

TABLE 1

	Mol. Per cent
Methane	58.20
Ethylene	6.71
Ethane	13.09
Propylene	6.05
Propane	10.62
Butylene	2.06
Butanes	2.08
Pentanes and heavier	1.19

The gasoline is removed in a stabilizer, then the gas leaving the stabilizer has the composition shown in Table 2.

TABLE 2

	Mol. Per cent
Methane	11.01
Ethylene	5.98
Ethane	19.10
Propylene	18.38
Propane	35.67
Butylenes	4.89
Butanes	4.97

The analysis representing the final quality of the gas as it enters the polymerization unit is given in Table 3.

TABLE 3

	(1) Mol. Per cent	(2) Mol. Per cent	(3) Mol. Per cent
Methane	13.9	24.1	32.3
Ethane and ethylene	21.7	24.6	23.3
Propene	15.4	12.8	12.8
Propane	32.5	25.0	20.2
Butenes	8.5	6.2	5.4
Butanes	8.0	7.3	6.0

Reference: Motor Fuels From Polymerization, by Egloff, Morrell and Nelson, The Oil and Gas Journal, November 12, 1937, page 176.

Determining Color of Crude Oil

I would greatly appreciate your advising me if I could authoritatively pass an opinion on whether an oil is actually black and non-fluorescent?—R. L. H.

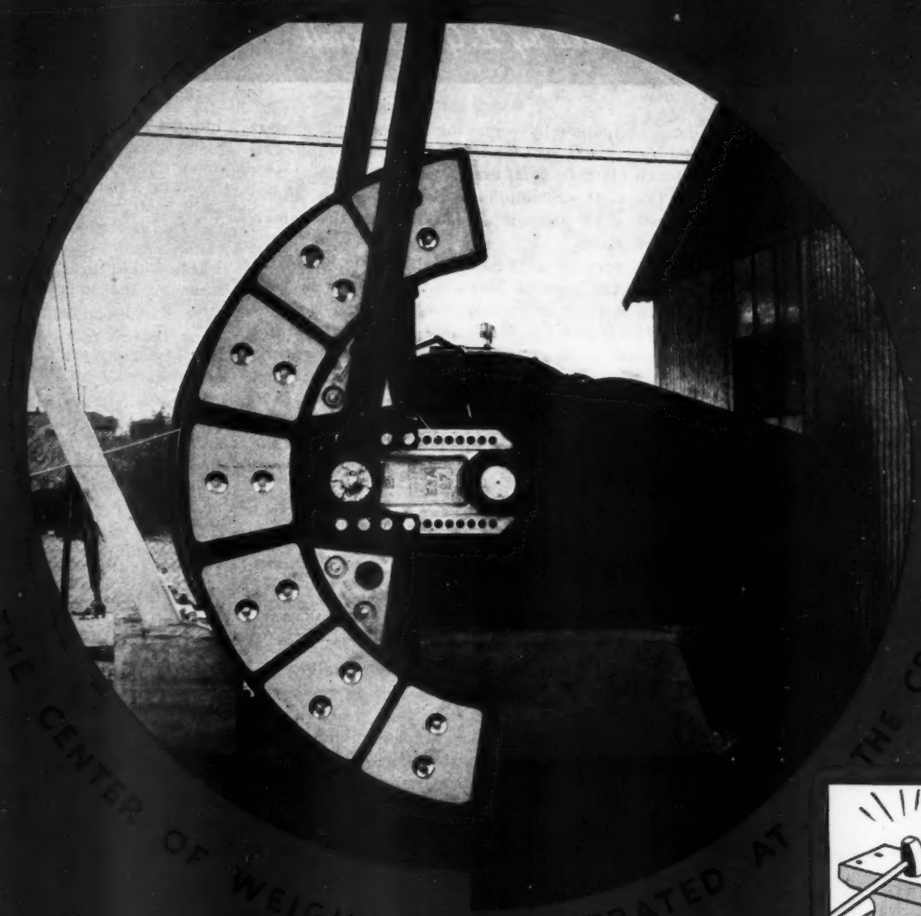
Crude oils may be black when viewed by direct light. The truly black oils are usually of the naphthenic type. Some oils that appear to be black will show fluorescence in reflected light. These oils are of several types, as for example certain paraffin base oils have a greenish cast; examples of the bluish fluorescence are to be found in some asphaltic base oils.

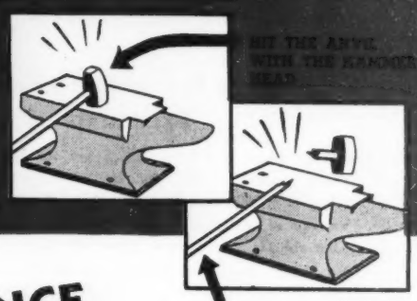
A positive identification of color of an oil could not be made unless definite conditions were assumed. There is no standard method for the determination of the color of crude oils but the A.S.T.M. Union Colorimeter method, as described for lubricating oils, could be adapted. The color of the oil is matched by comparison with a series of Lovibond glass color standards when viewed by transmitted light under specified conditions. Many crude oils would have to be examined in the diluted condition, as under procedure for oils darker than 8 color.

Reference: Gurwitsch-Moore, Petroleum Technology, page 213. A.S.T.M. Standards on Petroleum Products, page 64.

CORRECT COUNTERBALANCING

(NO. TWO OF A SERIES)





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CONTINENTAL

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Locating Royalty Owners Holding Small Interests

I own royalty in several counties in Texas. If production should be found on any of this land how do I get my share? Do I have to take any steps to find out or am I notified about it and by whom?—W. C.

If your royalty deeds are properly recorded in the county in which the land is located it will be possible for the pipe line company running any oil from the property to notify you about your share in the oil produced.

However, many brokers do not register the royalty certificates and if they represent only small fractions of the royalty to be paid upon oil from any tract and the address of the owners of the royalty is not known it becomes a very difficult problem for the pipe line company to trace royalty owners and pay them money due.

Under such circumstances the money is placed in escrow for a reasonable time. If the royalty owner proves claim to his share of the royalty money it will be paid. This means that it will be well for you to keep informed about the activities in the neighborhood of your property. When drilling starts upon the tract under which you hold royalty you should notify the operator of your interests in the royalty. He will in turn notify the company purchasing the oil of your interests.

Relative Size of Pipes For Heat Exchanger

We have a 3-inch suction on our hot water feed pump system. Can I insert a 12-foot section of 12-inch pipe, with coils of some size that will carry the same volume of water the 3-inch pipe delivers? The steam available is the exhaust from the feed water pumps. How many small pipes may be used to carry the equivalent volume of water as now delivered by the 3-inch suction line?—R. LeM.

In reply to your letter I give you the following information on equalization of pipes taken from Kent's Handbook chapter on direct hot-water heating.

"The relative capacities of different sizes of pipe for the same friction loss per 1,000 feet of run are given by the following figures:

Pipe size, in.	½	¾	1	1¼	1½	2	2½
Relative capacity	2	5	10	20	30	60	110

Pipe size, in.	3	3½	4	5	6	7
Relative capacity	175	260	380	650	1,050	1,600

"The equivalent numbers are proportional to the 5/2 powers of the diameters and the quantity of water "W" flowing equals Kd 5/2, where K = a constant and d = the pipe diameter, in.

"Example: Find the equivalent capacity of a 1¼, 1½ and 2-inch pipe.

"Solution: The equivalent capacity numbers are 1¼ = 20; 1½ = 30; 2-inch = 60. 20 + 30 + 60 = 110, which is the equivalent number of a 2½-inch pipe."

In your problem you have a 3-inch pipe with equivalent number of 175. This would indicate that 35 three-quarter inch, 17.5 1-inch, 8.75 1¼-inch or 5.8 1½-inch pipes may be used.

You mention coils. Why not make a simple heat exchanger by removing one section of your 3-inch suction line and inserting in its place a 12-inch diameter heat exchanger.

The next problem is to determine how many pipes of each size can be placed within the 12-inch header plates.

The area of a 12-inch circle is 113.10 square inches. The area of 2-inch tubing (O.D.) is 2.375 square inches. As the equivalent number is 60 for the 2-inch and 175 for the 3-inch it will require 175 ÷ 60 = three 2-inch pipes to carry the same volume of water as one 3-inch pipe. Three 2-inch pipes will occupy 7.125 square inches in the 113.10 square inches in the 12-inch header.

In the same manner it is possible to lay out the relative areas for the other size pipes as shown below:

Size pipe—	Equivalent number compared with 3-in. pipe	No. of pipes required	Outside diameter cross section area	Total area required in 12-in. circle
1½	175/30	5.8	2.885	16.01
1¼	175/20	8.75	2.164	19.476
1	175/10	17.50	1.358	23.760
¾	175/5	35.00	.866	30.310

This indicates there is ample room within the 12-inch header plates for the use of any required number of smaller pipes and your problem will be to select material at hand and assemble.

The area multiplied by the length of each pipe expressed in inches will give the external surface of the pipe. It is desirable to secure as large a total surface for the small pipes as possible to get the greatest surface contact between the exhaust steam and the pipes carrying the feed water.

Shutting Off Water-Bearing Formations

I am drilling some 1,800-foot wells which are completed below the Chattanooga shale and have found the formation hard and have had no trouble from cavings. However, several salt water bearing formations, and 8 to 10 very favorable oil showings, are penetrated. It has cost considerable to pull casing and underream and I am wondering if it is possible to shut off the water formations with some chemical or cement so the hole can be completed to the producing formation. I propose to run and cement one string of casing to shut off upper waters. When the hole is completed a flow string will be run and cemented above the producing formation.—J. T. W.

In answer to your question it is suggested the following procedure be considered. I trust you know about the offset bit used for enlarging holes drilled with cable tools for it is necessary to follow out the suggestions I am about to make.

When you pick up a water formation it is assumed you can drill through it. When you have completely penetrated the water bearing formation continue the hole for 5 to 10 feet deeper.

Next enlarge the hole with an offset bit and be certain that all of the water bearing section is penetrated with a hole larger than the regular hole.

When the reaming of the hole is completed fill the bottom of the hole to some point well above the water formation with a fiber impregnated cement. This type cement is special oil well cement mixed with a fiber which tends to bind the cement into the pores in the formation.

It is suggested that the cement be mixed and run into the hole in a dump bailer and when sufficient cement has been placed that the casing head be shut in and pressure applied to the cement either by filling the hole with water and exerting a pump pressure on same or by applying air pressure to the shut in well building up pressure above the cement. The idea is to apply force to the cement before it sets so that as much as possible will be forced back into the pores of the water bearing formation and aid in the shutoff.

You state you will set a string of casing above the water bearing formations. This casing should be well cemented into place so that pressure can be built up at the casing head and maintained as long as desired.

After building up pressure in the hole it will be well to hold this pressure above the cement for such period as recommended by the cement makers in order that the cement may set. After this plugging job has been completed bail the hole dry and drill through the cement plug. As that portion of the hole through the water bearing formation is oversize there should be a rim of cement left opposite the water formation which should serve to shut off water until the hole can be completed. It is assumed that when the productive formation is reached a string of casing will be run and cemented on top of the pay.

Involved Transaction in Royalty and Oil Stock

Will you please look over the enclosed certificates of royalty and stock in an oil company and would like your opinion regarding their value.—LeR. C. N.

It is not within the province of The Oil and Gas Journal to pass upon paper of this kind, nor for that matter upon any stock, other than to publish market quotations from time to time.

We know the promoter is dead and his estate somewhat involved. You have no recourse in that direction but your deeds are recorded and if any oil is ever found under any of the land specified you can claim your share as specified in the deeds.

However, you will probably have to find out when oil is produced from those properties for it is not probable the pipe line company running the oil will ever be able to find that you hold royalty deed on a portion of same. The pipe line company will simply impound the oil or place the money in escrow and hold same for a reasonable time for the royalty owners to make claims.

On one deed you have purchased ten 5/100ths of one-half of one-eighth royalty. This is equal to 3 cents and 1¼ mills for each 10 bbls. of $1 oil produced.

You do not know whether royalty for more than 100 per cent of the oil has been sold on these properties. There are cases of record where the owner sold more than one-eighth royalty by splitting the royalty up into small fractions such as you have purchased and the matter then became very confused and had to be settled among the holders of the paper.

File the papers and watch the developments of the various areas as published in The Oil and Gas Journal from time to time. I know of no special activity in any of those areas at this time and because of the involved state of these royalties it is quite probable no reliable company would lease this land because it would cost more than it is worth to clear title.

This is not a very encouraging report. It is not worth spending extra money for additional information but if you are seriously interested in securing the location of the tracts you might write to the Zingery Map Co., Fort Worth, Tex., for prices on ownership maps of the areas. You would have to give them full descriptions of each tract and the cost of the several maps needed might be relatively high.

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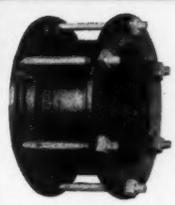

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NOTE TO READER: This is the twenty-fifth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line . . . For the complete story, write for Bulletin 351.

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Mid-Continent Daily Crude Runs Cut by 23,875 Bbls. During February

By D. H. STORMONT

Mid-Continent refiners this month began cutting back their crude runs in earnest, according to estimates made at the first of the month. And, in view of the rapid growth of gasoline stocks and the weakened condition of the tankcar markets, such action was none too soon.

During February it is estimated that runs to Mid-Continent refineries will total 503,535 bbls. daily, a reduction of 26,175 bbls. from the January total and some 37,000 bbls. less than the daily runs of February, 1937. The major portion of the decrease was noted in East Texas, Oklahoma and Kansas, with all other districts showing slight decreases or very small increases. Several refineries that have been operating steadily for the past several years were reported shut down on the first of the month. Among these were Barnsdall Refining Co.'s Wichita and Okmulgee plants, Cushing Refining & Gasoline Co.'s Blackwell plant, Pure Oil Co.'s Muskogee plant and Globe Oil & Refining Co.'s Blackwell plant. Other refineries also closed were McMurrey Petroleum Corp.'s and Premier Oil & Refining Co.'s plants in East Texas, Wilcox Oil & Gas Co.'s Bristow plant, and Shoreline Oil Co.'s plant at Lewis, La. Johnson Oil Refining Co.'s plant at Cleveland, Okla., is being reopened this month after a two-month shutdown and will process about 4,000 bbls. daily.

East Texas Runs Lower

Although the Sunday shutdowns were having some effect on daily runs in the East Texas field, the main factor involved was the market condition. Refineries in that area have been operating at fairly high levels all through the past year so that the present lessened demand is causing most refiners to curtail runs, or in some instances to shut down. Both McMurrey and General American have closed their plants indefinitely, and the Gladewater plant of General American Oil Co. is not expected to be rebuilt after being damaged by fire recently. Total runs for this area were some 8,000 bbls. below those of January.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1936	1937	1938
January	501,600	531,535	529,710
February	519,960	541,790	505,835
March	478,760	533,875	.....
April	506,775	558,385	.....
May	513,510	572,855	.....
June	527,225	593,625	.....
July	539,370	605,640	.....
August	557,650	624,475	.....
September	553,215	625,485	.....
October	536,330	619,210	.....
November	548,015	592,170	.....
December	535,500	544,040	.....

Operations by Refinery Districts

Daily crude runs

	Feb.	Jan.	Decr.
Arkansas	26,050	27,250	1,200
East Texas	50,980	58,840	7,860
Kansas	127,350	134,900	7,550
N. Central Texas	32,845	34,140	1,295
North Louisiana	48,900	47,000	*1,900
Oklahoma	128,470	136,370	7,900
Southwest Texas	15,720	15,920	200
W. Texas Panhandle	75,520	75,290	*230
Total	505,835	529,710	23,875

*Increase.

In the North Central Texas district runs are being curtailed by about 1,300 bbls. daily despite increases in runs at several plants. Post Refining Co. placed its new plant in the Rotan field in operation about January 21 and will process 700 bbls. daily during February.

In North Louisiana and Arkansas daily crude runs will continue at high levels, the total for the two districts being 700 bbls. higher than for January. New production in the Shuler and in the Arkansas extension of the Rodessa field is causing more crude to be available to refiners in that area than at any time in several years, therefore the high runs might be expected. Both Arkansas Fuel Oil Co. and Rodessa Oil & Refining Co. are increasing their refining schedules by 1,000 bbls. daily. Lion Oil Refining Co. is curtailing its runs by 1,000 bbls.

The high rate of refining activity being maintained in these two districts is reflected in the growth of gasoline stocks held by companies in that area. In the past four weeks stocks have increased from 397,000 bbls. to 507,000 bbls. and are now some 150,000 bbls. more than at this time last year.

Gasoline Stocks High

Total stocks of gasoline in the United States, which now are over 16,000,000 bbls. more than at this time last year, have been increasing at an extremely rapid pace in the past few weeks. On January 1 the total amount of motor fuel in storage was 77,291,000 bbls., according to A.P.I. figures, whereas at the last of the month the total was almost 85,000,000 bbls. In other words, stocks have been increasing at the rate of about 200,000 bbls. daily. And, since the advent of the heavy consumption season is still months away it is easily seen that unless runs to stills are lowered the industry will have an alarmingly large volume of gasoline in storage, with no immediate outlet, when the motoring season does begin.

The major portion of the increase in gasoline stocks took place in the East Coast, Indiana-Illinois-Kentucky and Texas Gulf regions, inventories in the Mid-Continent showing the comparatively small gain of 528,000 bbls. during the period. Thus while total gasoline stocks are now about 23 per cent higher than those of a year ago, in the Mid-Continent they are only some 3 per cent higher.

Estimated Daily Average Mid-Continent Refinery Crude Runs for February

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs— Feb.	Jan.
Berry Asphalt Co., Waterloo	2,000	1,000	900
Henry H. Cross, Smackover	6,000	4,000	4,000
Lion Oil Ref. Co., El Dorado	17,000	12,000	13,000
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Pet. Co., El Dorado	12,000	6,700	7,000
Stephens Ref. Co., Stephens	700	350	350
Total	40,200	26,050	27,250

KANSAS

Barnsdall Ref. Co., Wichita	6,000	(*)	4,000
Bay Pet. Co., McPherson	3,500	1,800	2,000
Chanute Ref. Co., Chanute	2,000	700	700
Chase Ref. Co., Chase	800	(*)	(*)
Derby Oil Co., Wichita	8,000	4,800	5,000
El Dorado Ref. Co., El Dorado	5,000	3,500	3,500
Falcon Ref. Co., Inc., Great Bend	1,000	500	500
Globe Oil & Ref. Co., McPherson	12,500	11,000	12,500
Kanotex Ref. Co., Arkansas City	12,000	5,000	4,500
Kreuger Ref. Co., Natoma	150	50	50
National Ref. Co., Coffeyville	8,000	4,600	4,600
Pet. Products Co., Chanute	800	600	600
Phillips Pet. Co., Kansas City	23,000	16,600	16,300
Roper Pet. Co., Parsons	400	300	300
Shallow Water Ref. Co., Scott City	2,000	1,500	1,250
Shell Petroleum Corp., Arkansas City	20,000	15,000	16,000
Sinclair Ref. Co., Coffeyville	12,000	8,000	8,100
Sinclair Ref. Co., Argentine	11,000	7,000	7,000
Skelly Oil Co., El Dorado	23,000	20,500	21,000
Socony-Vacuum Oil Co., Inc., Augusta	20,000	17,000	17,500
Standard Oil Co. (Indiana), Neodesha	7,500	5,800	6,000
United Ref. Co., Russell	1,200	509	500
Vickers Pet. Co., Potwin	4,000	2,500	3,000
Total	183,850	127,350	134,900

*Shut down.

EAST TEXAS

Beacon Oil & Ref. Co., Henderson	4,500	(*)	(*)
Cascade Ref. Co., Reed Switch	3,000	2,000	1,900
Clay Ref. Co., Arp	3,500	2,500	3,000
Danciger Refs., Inc., Longview	10,000	5,000	4,000
East Texas Ref. Co., Longview	10,000	3,000	5,500
Hurricane Pet. Corp., Overton	5,000	3,550	3,550
Hurricane Pet. Corp., Arp Ref., Arp	3,750	2,250	2,250
Lacy Ref. Co., Kilgore	3,000	2,000	2,100
Magnolia Pet. Co., Corsicana	5,000	3,780	3,780
Martin Ref. Co., Gladewater	3,000	2,000	2,060
McMurrey Pet. Corp., Tyler	10,000	(*)	2,500
Premier Oil Ref. of Texas, Willow Springs	4,500	(*)	2,800
Paluxy Asphalt Co., Talco	5,000	2,500	2,500
Sinclair Ref. Co., Camp Switch	6,000	1,900	2,000
Solvex Refs., Inc., Gladewater	4,500	3,000	3,000
Southport Pet. Co., Kilgore	5,000	3,000	3,000
Talco Asphalt & Reg. Co., Mt. Pleasant	7,000	5,500	5,000
Texas Co., The, Dallas	16,000	7,500	7,800
Tower Ref. Co., Overton	3,000	1,500	2,100
Total	112,750	50,980	58,840

*Shut down.

NORTH CENTRAL TEXAS

Baird Ref. Co., Baird	1,500	1,200	1,200
Coleman Ref. Co., Coleman	750	170	300
Continental Oil Co., Wichita Falls	6,000	3,330	2,935
Exchange Pet. Corp., Albany	800	(*)	(*)
Falls Ref. Co., Wichita Falls	2,000	600	600
Denver Prod. & Ref. Co., Gainesville	2,500	1,000	1,000
Graham Ref. Co., Graham	200	40	40
Gratex Ref. & Fuel Oil Co., Graham	500	250	270
Gulf Oil Corp., Fort Worth	8,000	6,000	6,500
Hightower Oil & Ref. Corp., Brownwood	750	100	100

Company and location—	Daily capacity	Av. dly. runs Feb.	Av. dly. runs Jan.
Jacksboro Ref. Co., Jacksboro	250	65	75
Kraco Ref. Co., Bryson	2,000	1,200	600
La Salle Pet. Co., Burkburnett	3,500	600	600
Magnolia Pet. Co., Fort Worth No. 1	12,000	1,400	1,470
Midway Ref. Co., Coleman	200	90	90
Midway Ref. Co., Goldsboro	300	90	100
Norgold Ref. Co., West Olney	500	(*)	(*)
North Texas Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	3,100	3,500
Olney Oil & Ref. Co., North Olney	3,000	300	1,000
Panhandle Ref. Co., Wichita Falls	4,200	2,600	2,400
Panhandle Ref. Co., Lueders	1,500	900	1,000
Sinclair Ref. Co., Fort Worth	5,000	2,800	2,800
Southland Ref. Co., Olney	500	30	200
Taylor Ref. Co., Taylor	1,000	800	800
Taxman Ref. Co., Wichita Falls	3,250	(*)	(*)
Texas Pacific Coal & Oil Co., Caddo	1,000	600	600
Tucker Oil Co., Burkburnett	250	150	160
Tydal Ref. Co., Gainesville	1,850	1,400	1,500
Wagoner Ref. Co., Electra	6,000	3,700	4,000
Total	74,900	32,845	34,140

*Shut down.

NORTH LOUISIANA

Arkansas Fuel Oil Co., Bossier City	25,000	20,000	19,000
Atlas Pipe Line Co., Shreveport	12,500	9,500	9,500
Bayou State Oil Corp., Hosston	750	400	500
East Texas Ref. Co., Sandra	7,000	5,500	5,500
Griswold Refs., Inc., Shreveport	1,000	(*)	(*)
Rodessa Oil & Ref. Co., Cedar Grove	12,000	10,000	9,000
Shoreline Oil Co., Lewis	5,000	(*)	(*)
Stanolind Oil & Gas Co., Superior	5,000	3,500	3,500
Total	68,250	48,900	47,000

*Shut down.

OKLAHOMA

Anderson-Prichard Ref. Corp., Cyril	6,500	6,000	6,000
Barnsdall Ref. Co., Barnsdall	6,000	3,500	3,000
Barnsdall Ref. Co., Okmulgee	10,000	(*)	(*)
Bell Oil & Gas Co., Grandfield	5,000	3,100	3,200
Black Gold Ref. Co., Oklahoma City	3,000	900	900
Champlin Ref. Co., Enid	16,000	6,500	7,000
Cities Service Oil Co., Okmulgee	4,000	2,320	2,970
Cities Service Oil Co., Ponca City	12,000	7,850	7,100
Continental Oil Co., Ponca City	30,000	11,000	12,600
Cushing Ref. & Gasoline Co., Blackwell	1,700	(*)	800
Cushing Ref. & Gasoline Co., Cushing	6,200	3,800	2,500
Cosco Oil Co., Wynnewood	2,500	1,500	2,000
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	2,000	2,000
Globe Oil & Ref. Co., Blackwell	8,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	4,000	(*)
Knox Ref. Co., Covington	300	100	100
Mid-Continent Pet. Corp., West Tulsa	40,000	20,000	23,000
Ohio Oil Co., Bristow	5,000	2,800	2,800
Omar Ref. Co., Garber	4,000	2,000	2,000
Peppers Gasoline Co., Oklahoma City	500	400	400
Phillips Pet. Co., Okmulgee	6,500	5,700	4,700
Pure Oil Co., Muskogee	10,000	(*)	7,400
Pyramid Prod. & Ref. Corp., Oklahoma City	600	(*)	(*)
Rock Island Ref. Co., Beckett	6,500	4,500	5,000
Sinclair Ref. Co., Sand Springs	8,000	4,000	4,000
Sooner State Ref. Co., Oklahoma City	700	(*)	(*)
Sun Oil Co., Yale	5,000	2,000	2,000
Sunray Oil Co., Allen	6,500	3,400	2,900
Texas Co., West Tulsa	16,000	9,700	10,600
Tide Water Oil Co., Drumright	12,000	12,000	12,000
Triangle Prod. & Ref. Co., Oklahoma City	1,200	400	400
Wilcox Oil & Gas Co., Bristow	6,000	(*)	(*)
Total	258,400	128,470	136,370

*Shut down.

SOUTHWEST TEXAS

Amsco Ref. Co., Mirando City	4,500	3,500	3,250
Carle Ref. Co., Inc., San Antonio	1,000	(*)	(*)
Humble Oil & Ref. Co., San Antonio	5,000	3,100	3,100
Ina Oil & Ref. Co., Hondo	400	(*)	(*)
Magnolia Pet. Co., Luling	8,000	3,520	3,570
Pettus Oil & Ref. Co., Pettus	1,000	800	800
Phoenix Ref. Co., San Antonio	1,200	700	700
Phoenix Ref. Co., Pettus	900	400	400
Pioneer Oil & Ref. Co., Somerset	2,000	700	700
Rado Ref. & Prod. Co., McAllen	800	500	500
Texas Co., San Antonio	3,000	2,100	2,500
White Wing Ref. Co., Sullivan City	1,000	400	400
Total	28,800	15,720	15,920

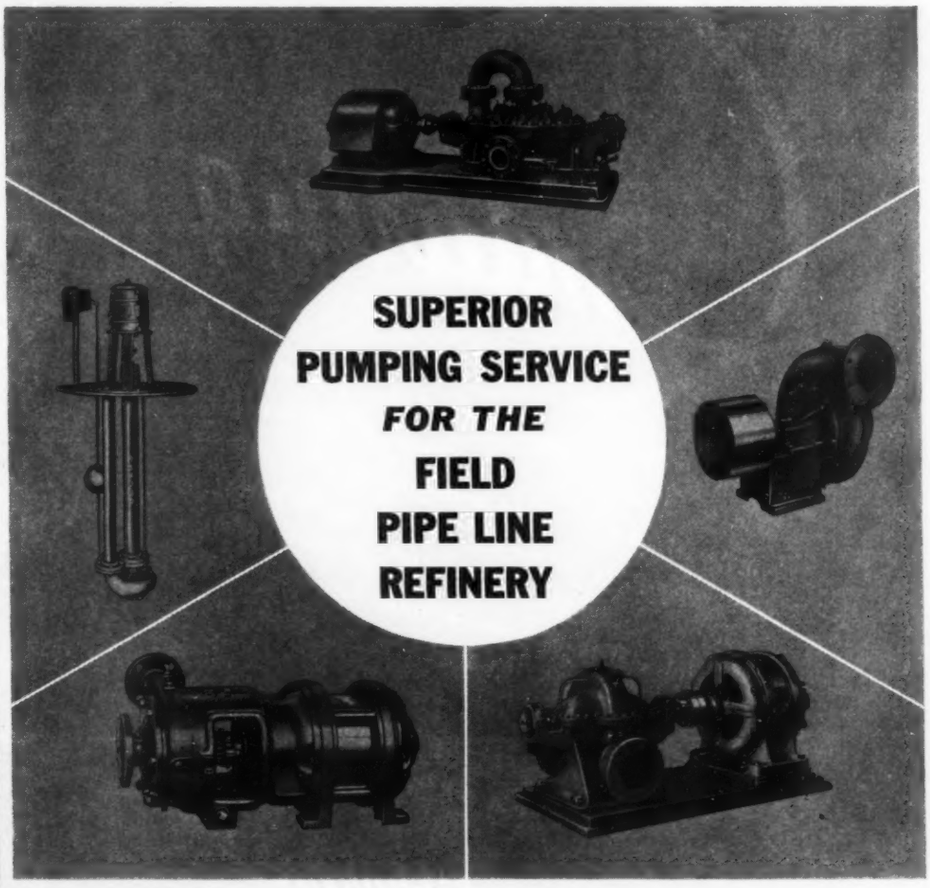
*Shut down.

WEST TEXAS AND PANHANDLE

Company and location—	Daily capacity	Av. dly. runs Feb.	Av. dly. runs Jan.
Aero Gas & Ref. Co., Fort Stockton	350	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	70	100
Cosden Oil Co., Big Spring	10,000	9,000	9,000
Danciger Refs., Inc., Pampa	6,500	4,700	5,000
Danube Oil Corp., Borger	400	200	200
Farmers Ref., The, Lubbock	500	200	200
Gulf Oil Corp., Sweetwater	7,000	6,300	6,800
Howard County Ref. Co., Big Spring	2,000	1,100	600
Moutray Oil Co., Hawley	1,400	950	1,000
Onyx Ref. Corp., Hawley	3,000	1,800	1,500
Panhandle Ref. Co., Kings Mill	2,500	1,750	1,700
Payward Ref. Co., Shamrock	1,000	600	600
Phillips Pet. Co., Borger	50,000	20,500	21,400
Post Refining Co., Rotan	800	700	200
Shamrock Oil & Gas Corp., Sunray	3,000	2,500	2,500
Shamrock Oil & Gas Corp., Lefors	1,600	1,300	1,300
Standard Oil Co., of Texas, El Paso	14,000	8,000	8,000
Stamford Ref. Co., Stamford	450	400	400
Starlight Ref. Co., Ballinger	1,000	150	150
Texas Co., El Paso	2,000	1,300	1,300
Texas Co., Amarillo	6,000	3,000	3,000
West Texas Ref. Co., Pecos	1,000	300	900
Western Ref. Co., Fort Stockton	1,000	100	400
West Texas Oil & Ref. Co., Sweetwater	60	(*)	40
Wickett Pet. Co., Wickett	4,000	2,500	1,000
Total	131,060	75,520	75,290

*Shut down.

Byron B. Boatright is in charge of a Gulf Coast branch office opened in the Second National Bank Building, Houston, Tex., by Parker-Foran-Knode & Boatright, consulting petroleum engineers, with headquarters in Corpus Christi and Austin, Tex.



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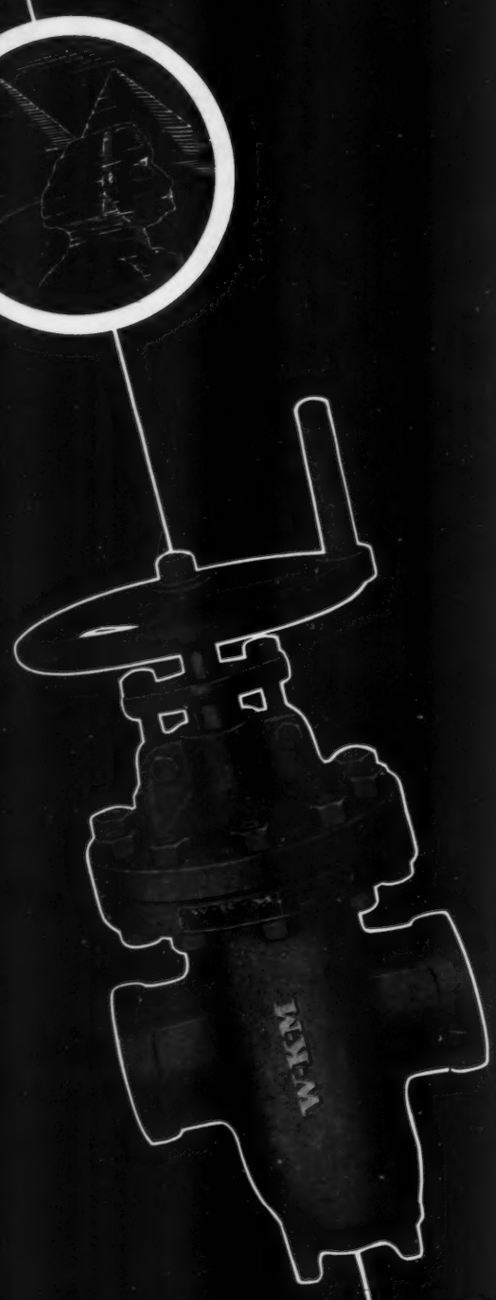

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FIELD OPERATIONS

Summarizing the Week's Developments

MICHIGAN—What looks like the most important discovery of the past week in any field was Chapman Oil Co.'s 500-bbl. well in the Edenville area, section 27-16n-1w, Midland County, Michigan. It flowed 2,000 bbls. in four days, although tightly pinched down, and producing from only 2 feet of penetration of the Dundee limestone. The well is 10 miles from the nearest production. The Buckeye field in Gladwin County developed a number of good wells in the course of the week.

TEXAS—All doubt seems removed that Magnolia Petroleum Co. has opened the third deep producing oil structure in the southern part of the West Texas Basin in its McKee test in Pecos County. The well flowed 91 bbls. in 30 minutes. Total depth is 5,294 feet in the Simpson or Middle Ordovician series. The K.M.A. field in Wichita County appears to have been given a 3-mile northerly extension. One distillate pool each in Starr and Nueces counties; the extension of the West Saxet pool, and a new producing horizon in the Clara Driscoll field, all in Southwest Texas, were features. In the Gulf Coastal division a well in Galveston Bay, showing oil, is expected to make a producer. The second well in the Villa Platte field, Evangeline Parish, Coastal Louisiana, makes the structure look like one of major importance.

OKLAHOMA—A new area on the Centrahoma structure in Coal County was opened with the completion of a 165-bbl. well in section 27-2n-9e. A second producer was completed in the Lamont pool, Grant County, northwestern Oklahoma, flowing 2,238 bbls. of oil and 1,488 bbls. of water in 24 hours. Five oil wells were completed in the Oklahoma City field.

KANSAS—An Arbuckle lime pool was opened in section 18-18-10w, south of the Stumps pool in Rice County. An Ellis County wildcat in section 12-11-18w, west of Bemis, gave promise of opening a Lansing lime sector. The Stoltenberg pool, Ellsworth County, was extended 1 mile north in section 16-16-10w. Thirty-six producing wells have been completed in Neosho Falls field, Woodson County, and 23 rigs are operating.

NORTH LOUISIANA—A southwest extension to the Lisbon field, Claiborne Parish, bringing it into section 2-20-15, is doubly important in that the well, flowing 12 bbls. an hour, required no acid treatment to make it produce. The southwest end appears to be the best part of that important new field.

COLORADO—The Gulf Oil Corp.'s wildcat in Cheyenne County, 30 miles west of the Kansas state line, showed oil at 4,808-13 feet, total depth. It is on a big block of acreage and it is the first to show oil of a number of deep tests that have been made in the past year or more in the eastern half of the state. Cavings had, up to last report, prevented a test of the producing formation.

NEW MEXICO—Closing of the gap between the north and south producing sectors of the Vacuum area, Lea County, was assured with a producer completed in section 35-17-34, and a near-completion in section 23-17-34. Ten wells were completed in Lea County. A failure was recorded in section 19-15-27, Chaves County, but a new Chaves wildcat was started in section 1-4s-29.

Completions in All Fields

(Week Ending February 5, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	83	15	1	99	594	494
Ohio	3	9	6	18	116	97
Indiana	0	1	5	6	12	20
Kentucky	8	2	3	13	73	17
Illinois	8	0	2	10	58	0
Michigan	14	1	0	15	74	85
Kansas	22	0	8	30	218	198
Oklahoma	26	5	6	37	199	262
Texas:						
North Central Texas	24	0	21	45	253	257
West Texas	31	1	6	38	265	230
Texas Panhandle	11	0	0	11	90	61
East Texas	51	0	0	51	278	232
East Central Texas	1	0	3	4	51	62
East Texas border	3	0	0	3	17	50
Gulf Coast Texas	7	0	3	10	127	133
Southwest Texas	40	2	4	46	213	348
Total Texas	168	3	37	208	1,294	1,373
North Louisiana	7	0	3	10	69	45
Gulf Coast Louisiana	3	0	2	5	64	42
Total Louisiana	10	0	5	15	133	87
Arkansas	1	0	1	2	24	6
Montana	1	0	0	1	6	12
Wyoming	0	0	0	0	18	10
Colorado	0	0	0	0	0	2
New Mexico	9	0	2	11	65	77
Utah	0	0	0	0	0	0
California	31	0	5	36	165	131
Total United States	384	36	61	501	3,049	2,871
Total previous week	366	48	106	520		
Difference	18	12	25	19		

Outstanding Fields--Highlights

(Week Ending February 5, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	4	8	4	1,903	467	19,528
McCampbell	4	5	3	460	105	4,369
Saxet	3	8	1	125	580	34,410
Benavides	2	8	5	535	137	5,636
East Texas	44	100	51	2,626	24,505	423,989
Talco	5	6	1	21	611	24,100
K.M.A. (deep sand)	*78	90	8	5,198	124	6,490
Ector County	17	77	7	6,419	859	25,810
Winkler County	16	19	7	6,538	1,571	37,800
*Includes locations.						
OKLAHOMA						
Fitts-Jesse	5	17	1	109	957	74,000
Oklahoma City	4	11	5	3,896	1,055	114,025
KANSAS						
Barton County	6	35	3	1,709	290	11,780
Ellis County	4	23	2	1,874	276	9,425
Rice County	5	22	2	925	1,100	34,275
Russell County	8	43	6	2,577	1,000	32,565
NEW MEXICO						
Lea County	14	111	9	1,427	1,615	98,680
LA-ARK-TEX						
Rodessa, Ark.	3	9	1	170	62	7,615
Rodessa, La.	0	6	2	1,080	443	43,340
Rodessa, Tex.	3	11	3	1,610	391	29,910
Lisbon, La.	2	11	3	1,705	170	11,035
Shuler, Ark.	1	18	0	0	28	8,225
MICHIGAN						
Buckeye	3	31	11	5,454	353	24,193
ILLINOIS						
Central Illinois	30	100	8	2,546	270	24,417
CALIFORNIA						
Wilmington	13	28	11	20,477	364	84,800

North Louisiana, Arkansas

Wells in Lisbon Extension Require No Acid Treatment

By GEORGE WEBER

SHREVEPORT, La., Feb. 7.—The Lisbon field of Claiborne and Lincoln parishes was extended three-quarters of a mile to the southwest into what may prove to be the best producing area in the field. Other developments of importance were few, routine completions and drilling in a small number of fields accounting for most of the activity. Two important wildcats again drew attention after resuming operations following a shut down of several days. A third wildcat, drilling below 9,800 feet is also watched closely.

Although the Arkansas Board of Conservation's ruling raising the allowable production of the Shuler and Miller County Rodessa fields was made effective, the latest weekly production average included only part of the new daily rate, and both fields showed decreases in their daily averages for the past week.

RODESSA COMPLETIONS

Caddo Parish

The Louisiana sector of Rodessa gained two good wells. F. W. Burford No. 3 Terry, E half NE section 2-23-16, came in making 14 bbls. per hour on a half-inch choke with tubing pressure of 500 pounds and casing pressure of 600 pounds. Three thousand gallons of acid was used. Total depth is 6,025 feet.

Standard Oil Co. of Louisiana No. 1 Spearman, NE SE section 3-23-16, had an initial of 745 bbls. daily on a half-inch choke, tubing pressure 275 pounds, casing pressure 625 pounds, total depth 5,987 feet, with casing set at 5,930 feet.

Marion County

The Jefferson sector of Marion County, Texas, which leads activity in the field at the present time, gained three wells. Fohs Oil Co. No. 1 Henderson, U. Ewing Survey, made 386 bbls. per day on a quarter-inch choke, tubing pressure 500 pounds and casing pressure 950 pounds. Total depth is 6,025 feet.

Gulf Oil Corp. No. 1 Beard, Bennington Survey, made an initial of 26 bbls. hourly on a three-eighths inch choke, with tubing pressure 250 pounds, casing pressure of 600 pounds. Total depth is 6,041 feet. Five-inch casing was set at 6,005 feet.

Shell Petroleum Corp. No. 2-A Henderson, Bennington Survey, came in making 25 bbls. per hour on a quarter-inch choke with tubing pressure of 800 pounds and casing pressure of 950 pounds. Total depth is 6,037 feet.

Miller County

In the Arkansas end of the Rodessa field activity picked up during the week, several new tests, having been started. Skelly Oil Co. No. 2 Thomas, NE cor. E half SW section 12-20-28, made 7 bbls. per hour on a 19/64-inch choke with tubing pressure 224 pounds and casing pressure 600 pounds. The total depth is 6,140 feet.

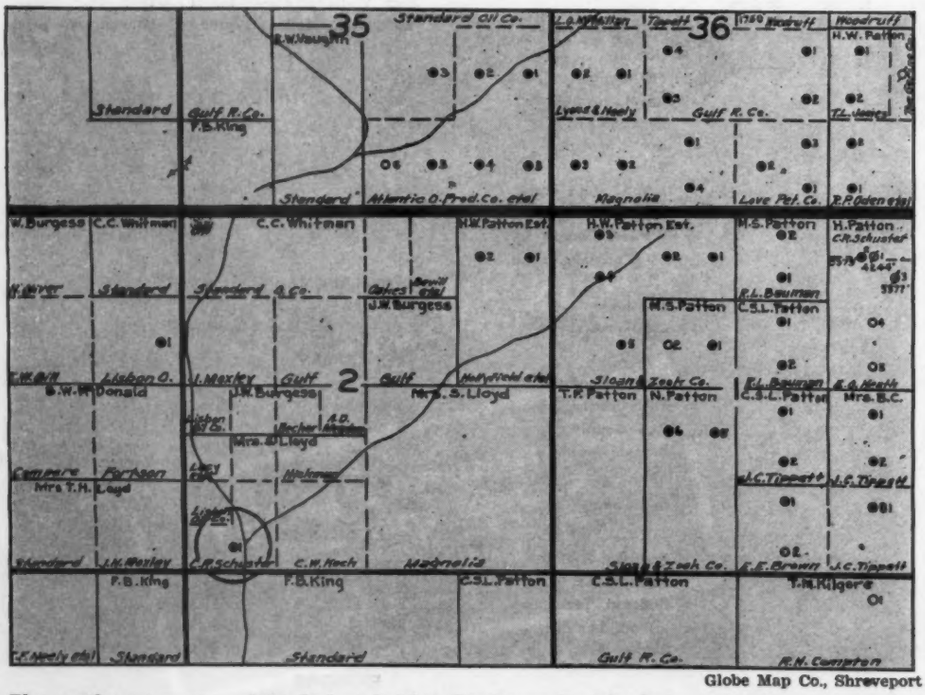
Lisbon Extension

Lisbon was the center of attention during the week as three good wells were brought in, one of which extended the field. In the C S half SW SW section 2-20-15, C. R. Schuster and others completed No. 1 Sallie Lloyd, which had an initial production of 7 bbls. hourly through a 10/64-inch choke. Total depth is 5,360 feet and 5½-inch casing was set at 5,271 feet. An important factor in the successful extension is that the well required no acid treatment. The same was true of the former southwest edge wells completed by Sloan & Zook. The second of these Sloan & Zook wells is No. 6 Patton Estate, C W half NE SW section 1-20-5. It flowed 12 bbls. hourly through perforations at 5,292-5,309 feet and open tubing. Saturated lime was cored at 5,293-5,302 and 5,304-07 feet and 5½-inch casing was set on bottom at 5,345 feet. The well is flowing with a tubing pressure of 150 pounds.

A third producer added at Lisbon during the week is Atlantic Refining Co. No. 2-B Bean, C S half NW NE section 32-21-4, which made 52 bbls. per hour on a three-quarters inch choke with tubing pressure 180 pounds and casing pressure 440 pounds. It had been acidized with 3,000 gallons. Total depth is 5,206 feet.

The extension is one of the most important Lisbon has ever had. In the intervening area between the Schuster outpost and the Sloan & Zook wells considerable activity is expected shortly. The porous lime in all three producers indicates a heavy producing area.

In southern Claiborne Parish, north Louisiana's deepest active test, was coring in black shale below 9,823 feet. It is Union Producing Co. and Standard Oil Co. of Louisiana No. 2 Brownfield, in the Sugar Creek field in section 5-19-5.



Globe Map Co., Shreveport

The southwest section of the Lisbon field in Claiborne Parish shows indications of proving the most productive part of the field. The Schuster No. 1 Lloyd, indicated by the large circle has been completed and is making 7 bbls. per hour without acidizing. Two wells of Sloan & Zook, Nos. 5 and 6 Patton on the southwest edge of the field are also flowing naturally

Estimated Daily Production

Estimated daily gross production all companies week ending February 4, 1938:

NORTH LOUISIANA

	Bbls.
Bellevue	640
Caddo light	3,830
Caddo heavy	2,520
Converse	645
Cotton Valley heavy	295
Cotton Valley light	*5,980
De Soto and Red River	1,420
Elm Grove	350
Haynesville	3,045
Holly	95
Homer	2,510
Lisbon	11,035
Pleasant Hill	115
Rodessa	43,340
Sarepta-Carterville	320
Sligo	485
Sugar Creek	360
Urania	2,885
Zwolle	780
Total	80,650

SOUTH ARKANSAS

Buckner	405
Champagnolle	1,200
El Dorado	1,845
Lisbon	275
Miller County	400
Nevada	670
Rodessa	7,615
Shuler	8,225
Smackover light	1,985
Smackover heavy	15,845
Stephens	560
Troy	1,300
Urbana	1,200
Total	41,525

Texas side of Rodessa field 29,910 bbls. daily.

*3,555 bbls. is distillate.

De Soto Parish

On the southern edge of the Bull Bayou field in De Soto Parish, Barrett No. 1 Jal Drilling Co., in section 7-11-11, tested 480 feet of oil in the stem in 23 minutes at 2,777-2,809 feet, and 6⅝-inch casing has been set at 2,777 feet for an early production test.

A few hundred feet due west of the Barrett test, and outside the field limits, Petroleum Heat & Power Co. No. 1 Taylor is reported to have cored a sand at 2,826 feet. The hole will be drilled ahead and casing will be set and perforated to test the horizon.

Lincoln Wildcat

Oakes & Easton No. 1 Griggs, a wildcat in south-

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eastern Lincoln Parish, is an apparent failure. Operators cored a lime section which showed oil at 5,931-40 feet on a Schlumberger test. Casing was set and perforated at that level, but subsequent attempts to bring the well in have failed. The well was acidized, and last week shot with 14 quarts of nitroglycerin but the only results have been a rainbow on the pits and a show of gas. The test will be shut in for the next few days.

Webster Parish

Cotton Valley added one deep producer during the week when Ohio Oil Co. No. 2 Warren Cox came in making 441 bbls. of distillate and 5,000,000 feet of gas per day through a three-eighths inch choke. Casing pressure was 2,900 pounds and tubing pressure 2,500 pounds. Total depth is 8,110 feet.

In the same field, H. L. Hunt Oil Co. cored the Holloway sand at 5,632-42 feet and recovered 8 feet of saturated oil sand, in No. 1 Hope, section 24-21-10. The Hunt test is a mile due east of the Ohio Oil Co. No. 6 Holloway, discoverer of the sand. Since the Ohio well was brought in several months ago two tests, recently completed, have been the only further Holloway sand producers. Both of the latter tests were southwest of the Ohio test. Hunt is coring ahead in sand and shale at 5,680 feet on latest report.

The deep Shongaloo test, Magnolia Petroleum Co. No. 1 Sexton Unit, has set 9⅝-inch protective casing in the hole at 6,838 feet after running a Schlumberger test. The hole will be drilled ahead.

Natchitoches Test

A test of the Woodbine in Natchitoches Parish is getting under way in section 36-7n-9w, as J. E. Popkins is rigged up on No. 1 Peavy Lumber Co. The operator holds a 4,000-acre block around the test.

Red River Failure

The Arkansas Fuel Oil Co. No. 1 Franklin Realty Co., in NW section 20-11-9, was abandoned this past

(Continued on Page 106)

Michigan Field Report

By
O. C. PRESSPRICH

Midland County Discovery Most Important Since Oard

SAGINAW, Mich., Feb. 7.—Every other Michigan oil field development of the week was thrown completely into eclipse by the spectacular discovery in Edenville Township (16n-1w), Midland County, of what oil operators declare the most important petroleum find in Michigan since the Oard discovery in Buckeye Township, Gladwin County, in July, 1936.

The Edenville discovery, made at Chapman Oil Co. No. 1-A State, NW SW NE section 27-16n-1w, in the midst of a solidly-leased area more than 10 miles from the nearest production, produced 2,000 bbls. of oil in its first four days, though tightly pinched in while crews erected emergency storage tanks and laid a pipe line to a tank truck rack on a highway half a mile away. Opened wide for a 30-minute interval 48 hours after the drill tapped the pay, the well flowed 110 bbls., accompanied by a heavy flow of gas.

This production came from only 2 feet of penetration of the Dundee limestone. Deepening was planned, but was delayed because of lack of tankage facilities. The drill found the Dundee top at 3,790 feet.

Lease and royalty prices soared spectacularly in the few days since the Chapman discovery, and operators holding nearby leases rushed equipment into that scrub cutover region, preparatory to immediate exploration on the prospective new field's possibilities. One major independent producer was reported to have paid $5,000 for an offset lease and to have refused a few hours later an offer of $20,000 from another operator.

Though the Chapman test monopolized the spotlight of attention, the two Buckeye Township oil fields in Gladwin County (Township 18n-1w) added 4,745 bbls. daily to Michigan's output, while other fields, exclusive of Chapman's Edenville test, added 395 bbls. daily. There were 10 completions in the Buckeye pools—Wicklund (north) and Oard (south), and 6 completions in other fields, exclusive of the Edenville discovery. There also were five tests plugged and abandoned as dry in areas where persistent efforts to find pay sands have met with failure. Altogether 5,640 bbls. daily was added to potential production last week, including Edenville. Thus, the week proved one of the most significant in months, both from the standpoint of production added, and the almost assured addition of a new Michigan pool.

North Buckeye

With an acidized production estimated at 1,000 bbls. daily, American Drilling Co. No. 6 Soldan, SW NW SE section 12-18n-1w, shared significant honors with two Sun Oil Co. tests in section 3—northwesterly field extension—each contributing 650 bbls. to a 3,280-bbl. daily additional output for the north pool. The section 12 development, laying to the east of the discovery section, was a valuable addition to the field, being one of the best producers in the area, with 1,000 bbls. acidized production. Sun Oil Co.'s prolific Strohkirch lease in section 3, together with Turner Petroleum Co.'s addition, also in section 3, proved up the northwest area, flanked on the west offset by dry holes. Sun Oil Co. No. 8 Strohkirch, SW SE SW section 3-18n-1w, acidized, produced 650 bbls. daily and its No. 9 Strohkirch, an offset, SE SW SW section 3, also acid treated, produced 650 bbls. per day. Turner Petroleum Co. No. 3 Schranz, NW SE SE section 3-18n-1w, was a 100-bbl. acidized producer. Cryden Petroleum Co. No. 5 Shaffer, NE NE SW section 12-18n-1w, developed a 480-bbl. producer, on flow. This is another easterly test from the discovery sector. Sun Oil Co. brought in its No. 6 Card, NW SW NW section 10, and it flowed 450 bbls. daily, after it was acidized.

South Buckeye

South pool development centered around the discovery well in section 23 in the midway area, with favorable producers stepping up the output of the region. Robert L. Tope No. 4 Buehler, SW NW NE section 26-18n-1w, laying south of the section 23 discovery plot, headlined the week's production at 625 bbls., acidized. Section 26 links the midway sector with the south pool proper. In section 23, two highly favorable producers came into production. They are Rex Oil & Gas Co. No. 3 Woodring, SE SW SE section 23-18n-1w, with a 300-bbl. production after acidization, and Beaver Trust's No. 3-B Armstrong, SE SW SW section 23, estimated at 400 bbls. daily production after it had been acidized. In the south part of the field Rex Oil & Gas Co. No. 3 Arkwright, NW NW NE section 35-18n-1w, was acidized and flowed 140 bbls. daily.

Gladwin County—Secord Township

Setbacks are heaping up on Secord Township's prospective pool, with another dry hole reported the past week. It was Dafley Crude Oil Co. No. 1 Caplan, NE SE NE section 10-19n-1e, reported dry in the Dundee.

Hay Township, Gladwin County, added a small producer in section 16—east offset section to Buckeye's north pool—when Petroleum Investors, Inc., No. 2 Knight, SW NW SW section 16-18n-1e, came in at 50 bbls. daily, after an acid treatment. Hay development has been confined almost entirely to section 16, next door to Buckeye, but no startling producers have been tapped.

In Bentley Township, Gladwin County, Dibble Brothers test in section 1-17n-2e, was reported 127 feet in the Dundee late in the week with still no show of oil.

Bay County

Another sector of Bay County recorded a dry test this week when V. Leonard and Olympia Oil Co. No. 1 Hossler, SW SE NE section 9-18n-3e, proved unsuccessful and was abandoned.

Gratiot County

Nothing but dry holes greet operators in their quest for Gratiot County's pay streak. C. E. Bliss Trust's No. 1 Martin estate, SW SW NW section 26-10n-3w, proved up dry, adding another failure to a long string in Gratiot County.

Arenac County

E. Harvey Linabury No. 2 McTaggart, NE NE SE section 26-19n-3e, Adama Township, Arenac County, produced 95 bbls. a day after it was treated with acid.

Midland County

Pure Oil Co. No. 4-B Bond, N half SE SE section 12-13n-2w, Midland County, produced 40 bbls. daily after it was acidized.

Ogemaw County

Weber Oil Co. No. 1 Jensen, NW SE SW section 35-22n-2e, West Branch Township, acidized, produced 40 bbls. per day.

Saginaw County

The sole test in Swan Creek Township, Saginaw County, proved dry. It was Darke Brothers No. 1 Rockwell, SW SW SW section 5-11n-3e, dry in the Dundee.

Shiawassee County

W. E. Ross Trust's No. 1 McCullough, SE SW SW section 12-6n-3e, Shiawasse Township, will be plugged and abandoned, having found the Dundee dry.

Isabella County

Arthur Morris No. 1 Lawler, NW SW NW section 20-15n-3w, Denver Township, after testing for a week was completed as a 20-bbl. producer on the pump.

J. V. Wicklund Development Co. No. 1 Lawens, NW SW SE section 24-15n-5w, ran into difficulty when 450 feet down, and skidded the rig to redrill.

Pure Oil Co. No. 8-B McClintic, SW SW SW section 33-15n-6w, was completed with a natural production of 150 bbls. daily, and was tubing for acid treatment. Michigan Cities Natural Gas Co. No. 1 Baker-Cornell, C NW section 33-15n-6w, a gas test, was completing in the Michigan stray sand.

J. Golden Zabel No. 1 Kennedy Estate, NW NW NE section 25-14n-4w, was fishing for lost tools for the third week, below 1,500 feet.

Mecosta County

Sun Oil Co. No. 1 Robart, N half NE NW section 29, Fork Township, Mecosta County, was reported drilling at 3,415 feet on location mapped as an extension of the Sherman field and on the Broomfield high. The test, now in the Monroe, is 9½ miles northwest of Sherman.

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OKLAHOMA CITY L. D. 785 Local 7-2725

WICHITA L. D. 59 and 116 Local 2-1431 and 2-1432

AND BRANCH STORES

Southwest Texas District

Two Distillate Pools, New Sand and Field Extension

By
F. L. SINGLETON

CORPUS CHRISTI, Tex., Feb. 7.—Interesting developments in the Southwest Texas district the past week were wide spread. They included the opening of two distillate fields in Nueces and Starr counties, possible strikes for the Jackson trend in Bee and Live Oak counties and 1,500-foot east extension in the West Saxet pool and new sand discovery in the Clara Driscoll pool.

Union Producing Co. No. 1 Simmonds, 1 mile west of the town of Banquete, western Nueces County, opened a distillate field when it flowed an unestimated amount of wet gas from perforated casing at 4,810-35 feet. It was completed through a quarter-inch choke and the well is shut in, with tubing and casing pressure equalized at 1,950 pounds. It is one of the deepest holes drilled in that immediate area, reaching a depth of 8,710 feet before it was plugged back to 4,810 feet.

A 1,500-foot east extension was promised the new West Saxet field, Nueces County, with the showing of Renwar Oil Corp. No. 1 McKinzie which is running casing for a production test after two drill stem tests showed pipe line oil. The first test was made at 5,782-5,817 feet, and showed 75 pounds of working pressure and 630 feet of pipe line oil. A second test at 5,825-37 feet showed 570 feet of oil. The water level was determined when the hole was cored deeper to a total depth of 5,872 feet and casing will be cemented on bottom after a 16-minute drill stem test at 5,830-57 feet showed 1,800 feet of salt water. Based on top of the sand section this well is 10 feet higher than the discovery well. Approximately a half mile due west of the discovery, Rutherford Oil Corp. No. 1 Stewart is coring below 5,839 feet, but has failed to log any favorable showings. One mile southwest, Renwar Oil Corp. No. 1 Rand Morgan is drilling below 5,300 feet and is reported to be checking favorably. Another outpost test is getting under way with the spudding of C. Andrade No. 1 John Dunn, approximately 2,600 feet southeast of No. 1 McKinzie.

New Producing Horizon

In the southern part of Nueces County, a new producing horizon was opened in the Clara Driscoll field with the completion of Stanolind Oil & Gas Co. No. 1 Kampfhenkel, which is jetting 124 bbls. of oil daily from perforated casing at 5,325-40 feet. The majority of the wells are producing from a 3,800-foot zone, although several small producers have been completed at 4,600, 5,400 and 5,600 feet.

Along the Jackson trend interest was centered on two wildcats in Bee and Live Oak counties, which appear as possible pool openers. Southeast of the West Tuleta field and northeast of the town of Normanna, Bee County, Dirks Brothers were running casing in No. 1 Mangus Beck, in section 17, J. M. Uranga Grant, bottomed at 4,273 feet. The Pettus sand, showing some oil and gas, was topped at 4,215 feet and cored to 4,219 feet. Sand showing gas and some oil was cored at 4,200-25 feet, where a 4½-minute drill stem test developed 200 pounds of working pressure and 10 feet of oily drilling mud. Sand showing salt water was cored from 4,228 feet to the total depth; the casing will be cemented on bottom, and the well tested through perforations.

Across the line in the Alexander Parks Survey, Live Oak County, Hantho-Nelson, Inc., and J. Chew are running casing for a production test after logging favorable showing in the Pettus sand. The hole is bottomed in oil sand at 5,076 feet with shale and sand streaks bearing an odor of oil logged at 5,000-76 and 5,058-60 feet. Hard sand with an oil odor was cored at 5,060-61 feet; sandy shale and sand streaks with an oil odor at 5,061-73 feet, and sand with good saturation at 5,073-76 feet. No drill stem test or Schlumberger survey was made due to the small engine with which the hole was drilled. In the same county derricks were up for two additional wildcats. Six miles southwest of the town of George West in the G. L. Haas Survey, V. G. Schimmel and others staked location for No. 1 George West, while in the A.B.&M. Survey No. 45, Parry & Delaney are preparing to spud No. 1 Hogan & Stewart.

Laredo District

In the Laredo district, another important extension was apparently recorded for the active Benavides field, Duval County, as Benedum-Trees, Inc., prepared for a production test at No. 10 Puig, about a mile northeast of production. On a drill stem test at 4,763-75 feet, it flowed pipe line oil and built up 75 pounds of working pressure. The hole was carried to the Gravis sand at 4,818 feet, the total depth, where it tested salt water. Seven-inch casing was cemented on bottom.

The first oil producer from the 3,800-foot sand is Republic Production Co. No. 2-A Buey, which flowed 129 bbls. of oil daily through a one-eighth inch choke. The hole is bottomed at 3,894 feet and the well is producing from sand at 3,870-80 feet. Although this sand is known to overlay the "Parr and Gravis" sand and portions of the Pettus sand, only one well had been completed in it and it was a gas well.

Two miles northeast of the Peters field, Trinity Drillers have rig up for No. 1 Peters in the C.C.S.D. Survey No. 66, and Magnolia Petroleum Co. is moving in for No. 1 Duval County Ranch Co., Lot 5 of the Duval County School Land Survey No. 195. Both are wildcats.

Although not officially completed, Transwestern Oil Co. and others No. 3 Slick Estate, section 527, has opened a new pool in Starr County, as it is flowing into the pits under considerable pressure after perforating the casing at 4,212-30 feet. The hole was drilled to 6,862 feet where mechanical trouble developed, and was plugged back and casing cemented at 4,300 feet.

In the Weslaco area, Hidalgo County, Atlantic Refining Co. reperforated casing in No. 1 American Rio Grande at 8,634-42 feet and it is making a large volume of gas through a five-sixteenths inch choke under a working pressure of 2,700 pounds. It was originally completed as a distillate producer through perforated casing at 8,985-9,000 feet.

Balcones Fault District

In the Balcones Fault Line district, R. W. Fair No. 1 San Antonio Subdivision, a wildcat 4 miles southwest of Macdona, in the J. H. Pickens Survey, was officially completed as the discovery well of a shallow field, when it pumped 20 bbls. per day after treating the lime at 1,196 feet with 1,000 gallons of acid.

In Caldwell County, Mac-Wag-Tree Oil Co. No. 1 Roberts, 2 miles west of Tilman, in the W. House Survey, pumped 50 bbls. of sulfur water per day from a total depth of 2,633 feet.

There were four wildcat locations reported in the Fault Line district. In Bastrop County, R. C. Franklin has derrick up for No. 2 Yarrington, Jose Manuel Bangs Survey. In Caldwell County, D. L. Byrd has spudded No. 1 Parr, 3 miles north of Lockhart, in the James Hinds Survey, while in Gundalupe County, E. A. Hearn and others spudded No. 1 Dudelof, in the D. Clements Survey No. 18, 2½ miles northwest of Seguin. In the southeast corner of Uvalde County, Wilcox Oil & Gas Co. spudded No. 1 Morris, M. Carrello Survey No. 380.

COMPLETED WELLS

Completed wells in proven Southwest Texas fields, with their total depth, and the initial 24-hour production of the producing wells, were as follows:

Aransas County

McCampbell field: Atlantic Refining Co. No. 3 Scrivner, 7,222 feet, perforated casing 7,194-97 feet, 150 bbls., three-sixteenths inch choke; Tom Graham Oil Co. No. 2 Dunn, 7,141 feet, perforated casing 7,109-13 feet, 200 bbls., one-quarter inch choke; North Star Oil Co. No. 1 Coon-Brown, 7,250 feet, perforated casing 7,125-28 feet, 160 bbls., three-sixteenths inch choke.

Bexar County

Von Ormy field: E. M. Baker No. 2 fee, 542 feet, 30 bbls., pumping; E. M. Baker No. 3 fee, 670 feet, 4 bbls., pumping; No. 4 fee, 645 feet, abandoned; No. 5 fee, 655 feet, 3 bbls., pumping; No. 6 fee, 804 feet, 2 bbls., pumping.

Caldwell County

Branyon field: Wyrick & Linkenhager No. 1 Magee, 2,050 feet, 202 bbls. in 8 hours, open tubing. Buchanan field: Kingwood Oil Co. No. 1 Moore, 2,216 feet, 15 bbls. oil, 10 bbls. water, pumping. Dale field: Ralph Ogden No. 1 Dingee, 2,205 feet, 32 bbls., pumping; Ralph Ogden No. 2 Dingee, 2,224 feet, 70 bbls., pumping; Ralph Ogden No. 3 Dingee, 2,306 feet, 95 bbls. pumping. Luling field: Millican & Norman No. 3 Lampkins, 2,107 feet, 150 bbls., open tubing; Murchinson and others No. 5 Jennings, 2,076 feet, 250 bbls., open tubing. Salt Flats field: Martel Petroleum Co. No. 1 Bruce Albright, 2,670 feet, 20 bbls., pumping; L. D. Ormsby No. 6 Moses, 2,705 feet, 20 bbls. oil and 50 bbls. of water, pumping.

Duval County

Benavides field: Benedum-Trees, Inc., No. 9 Puig, 5,702 feet, plugged back to 4,750 feet, 102 bbls., jetting with gas; Navarro Oil Co. No. 1-B Rossi, 5,369 feet, 260 bbls., quarter-inch choke; Republic Production Co. No. 2 Buey, 4,800 feet, 60 bbls., one-eighth inch choke; Standard Oil Co. of Kansas No. 1-A Rossi, 5,346 feet, 72 bbls., 9/64-inch choke; Standard Oil Co. of Kansas No. 12 Rossi, 4,743 feet, 41 bbls. 9/64-inch choke. Hoffman field: Cox & Hamon No. 1 Hoffman, oil sand 2,738-41 feet, 30 bbls., jetting with gas. Lundell field: Government Wells Oil Co. No. 14 Lundell, 1,513 feet, plugged back 1,511 feet, 30 bbls. Sarnosa field: Magnolia Petroleum Co. No. 11 Ruiz, 2,450-56 feet, 35 bbls., pumping. Seven Sisters field: Reynosa Oil Co. No. 3 Garza, 3,100 feet, abandoned.

Karnes County

South Burnell field: Luling Oil & Gas Co. No. 18 Boyce, 3,658 feet, 147 bbls., three-sixteenths inch choke.

Live Oak County

Ezzell field: Parr & Delaney Oil Co. No. 6 Hell, 1,540 feet, 100 bbls., 7/32-inch choke; L. W. Powell No. 2 Simon, 1,483 feet, 250 bbls. per day, pumping.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 4 Chapman, 6,677 feet, 175 bbls., one-eighth inch choke; Humble Oil & Refining Co. No. 14 Webb, 6,702 feet, abandoned. Saxet field: Crown Central Oil Co. No. 9

(Continued on Page 106)

North and East Texas

By MITCHELL TUCKER

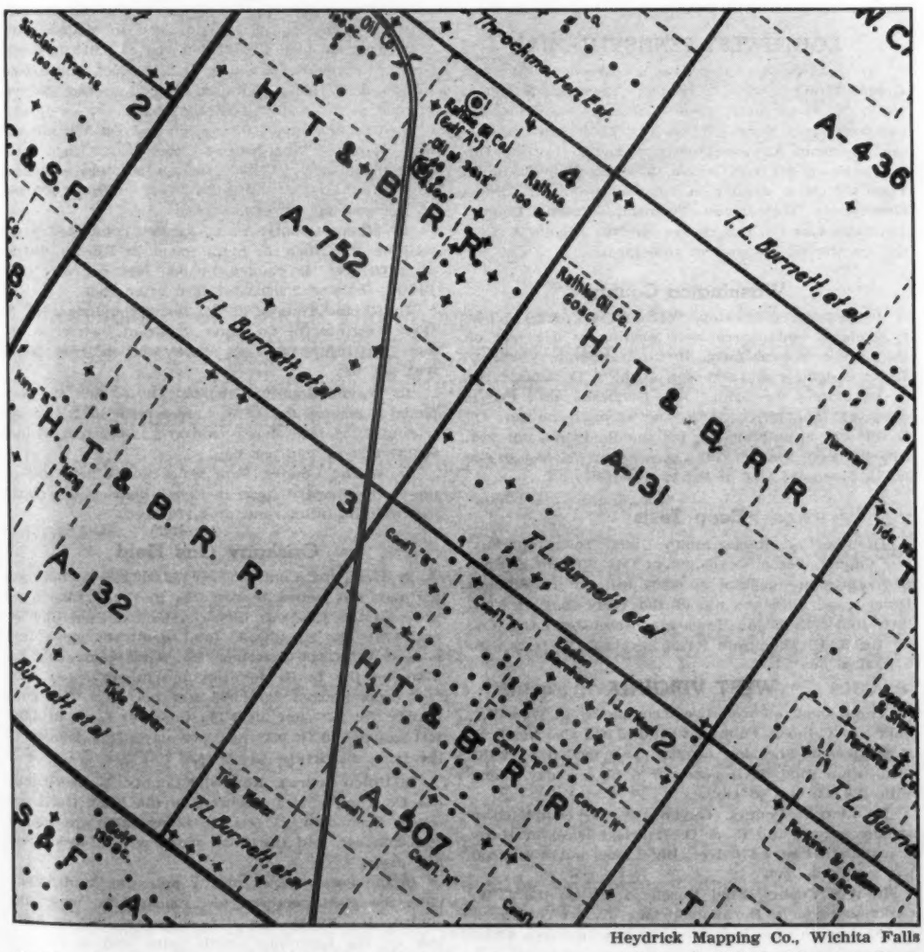
Favorable Showings in Test Three Miles North of K.M.A.

WICHITA FALLS, Tex., Feb. 7.—The K.M.A. field, a 3-mile outpost to the north, offers all indications of adding many acres to the field's proven territory. Rathke Oil Co. No. 1 Burnett, section 4, H.T.&B. Survey, Abstract 752, swabbed 700 feet of oil from the hole after drilling a series of saturated zones in the Kemp City lime: from 3,151 feet to 3,177 feet, brown sandy lime; 3,586 feet to 3,602 feet, gray sandy lime; 3,642 feet to 3,670 feet, brown sandy lime with streaks of saturation. Operators will give the well a nitroglycerin shot before deepening in search of the true sand found productive in the Kadane area of the field to the south. Favorable checking of important markers in this 3-mile northern extension (about midway between the field's limits and the town of Electra) points to much immediate exploration in that direction, although all intermediate leases are held by shallow stripper producers. The Burnett farm is also producing from the shallow horizons.

Three miles to the southeast, Joe A. Worsham continues to clean out before shooting his No. 1 Waggoner, section 13, B.S.&F. Survey. Fluid level and indications while drilling justify estimating this well as a 300- to 400-bbl. producer.

K.M.A. development has spread to three counties, in two of which it is productive. Twenty-five new locations were staked in the field last week, making a total of 34 locations announced but not yet active. Eight oil wells and one dry hole were completed in the field last week, bringing total producers to 124. Aggregate new potential for the week was 5,189 bbls.

Phillips Petroleum Co. closed one of the largest lease deals in the K.M.A. field since it began the present rapid development campaign. The company purchased 860 acres in the north half of the Floyd Jordan Survey, about 2 miles west of production on the west side of the field, from C. W. Boller and E. P. Griffin of Wichita Falls. Consideration was reported to have been $375 per acre in cash, with $850 to be paid out of oil produced. The southern boundary of the new Phillips tract is just 6,000 feet north of Geier Brothers and Jackson No. 1 Ancell, abandoned as dry last week to give the K.M.A. field its first limit to the west. This well, however, showed considerable water pressure. The Phillips company has done a good deal of core drilling and subsurface work in the territory, and is apparently relying on an active water drive on that edge of the field to afford them large yields on their new property, which is thought to be situated more favorably on structure than the Ancell well.



Heydrick Mapping Co., Wichita Falls

Rathke Oil Co. No. 1 T. L. Burnett, extreme northern outpost of the K.M.A. field, now showing evidence of production while in the testing stage. The well is about midway between K.M.A. production and the town of Electra

Archer County

Sam Viersen No. 1 W. P. Ferguson was completed with a production of 375 bbls. to make the second deep-pay producer in Archer County. A south offset to this well, the Schaffer No. 1-A Ferguson, was shot with 130 quarts of nitroglycerin and started heading oil after being plugged back from 3,891 feet to 3,886 feet. The well found broken saturated lime from 3,846 feet to 3,890 feet.

Clay County

Stimulated by prolific pay from the deeper levels at K.M.A., North Texas operators are looking to all other possible locations to make similar explorations. Clay County seems first to receive a deep play, as three such deep wildcats are drilling, and three others are rigging up. Walter Gant staked location for a 6,000-foot test 330 feet from the south and east lines of Block 9, Marion County School Lands, and one-half mile east of Henrietta. Six miles north of Henrietta, Wirt Franklin has made location for a 4,350-foot test in the northeast corner of Block 53, Angelina County School Lands. Southwest of Petrolia 3 miles, Woods Royalty Co. of Oklahoma City is erecting derrick for a 5,000-foot test on the Kempner ranch, Block 44, Bosque County School Lands, Abstract 10.

Six miles southwest of Henrietta, Harnett Petroleum Co. No. 1 Ben Nutter, Block 30, Grayson County School Lands, is being watched as it drills below 3,150 feet in shale. Southeast of Halsell about 5 miles, Healdton Oil & Gas Co. No. 1 Wallace, Block 33, Belcher subdivision, is drilling at 3,652 feet and has penetrated several sand formations, but with no shows of oil. In the extreme southwest portion of the county, Seitz-Comegys-Seitz No. 1 L. S. Wright, NE quarter of section 2,632, T.E.&L. Survey, is drilling at 3,300 feet, and has passed through several sands with small gas showings.

EAST TEXAS

DALLAS, Tex., Feb. 7.—During last Sunday's shutdown approximately half of the East Texas wells flowed at reduced allowables to provide gas needed for domestic and lease purposes. Those wells allowed to produce were pinched in at one-seventh of their regular daily allowable through the week to effect the same proration. Tankcar shipments of refined products from the East Texas field dropped from 3,405 cars in December, 1937, to 2,907 cars during January, 1938, a recent commission report indicated. The reduction is thought to be because of a weakening in demand, and also the Sunday shutdowns. During the last 31 days a total of 24,845,985 gallons of gasoline were shipped by rail.

Permian in East Texas?

Stanolind Oil & Gas Co. No. 1 Tennie Norris, deep test on the Thorton fault 5 miles north of Kosse in Limestone County, is coring ahead below 8,585 feet in brown dolomite. Geologists are attempting to strike some correlation of this well and Pure Oil Co. No. 16 Kendricks, recent deep failure in the Mexia field, which went to a total depth of 8,845 feet before plugging back for successive testings in porous zones of the Lower Marine, Travis Peak, Glen Rose and Woodbine. Stanolind's Kosse well topped the Lower Marine Trinity at almost the same subsea as it was found in the Pure Oil Co.'s well. In the latter hole a section of anhydrite and the dolomitic oolitic lime was cored at 8,567-71 feet, which some think might possibly be the Permian. Eighty-four feet of this lime was penetrated, with some porous zones recorded. Deep Permian deposition ap-

pears more favorable to oil production in view of the three deep areas recently opened in southern Arkansas from that horizon.

Talco Field

The Texas Railroad Commission issued its quarterly salt water and well status report for the Talco field last week, showing daily salt water production to be 10,671 bbls. from 313 of the total 610 pumping wells. This represents an increase of 1,628 bbls. per day over January of last year. However, salt water would be much larger in this field if an extensive reconditioning campaign had not been carried on during recent months. Several large producers have also been shut in recently.

Opelika

Possible further development of the Opelika area in northeastern Henderson County now depends upon the success of the three joint leaseholders in the territory (Humble-Seaboard-Tide Water) in securing extension and unitization of two 600-acre drilling blocks southwest of the discovery well. This partnership now holds leases on over 12,000 acres in the block, some of which will expire within 60 days. Approximately $500,000 has been spent in drilling the two freak producers in the deep seated structure, one a small oil well after plugging back from the Lower Trinity, and the other, No. 2 McElreath and Suggett, a gas-distillate producer which is finishing a 30-day production test granted by the Railroad Commission, during which time it has averaged 335 bbls. of distillate and 9,000,000 feet of gas daily.

In an effort to obtain unitized agreements between royalty owners on the two 600-acre tracts, the joint leaseholders are offering to drill two additional wells, one each on the 600-acre tracts, with the further provision that in the event of a gas well on either or both units, all royalty holders will share proportionately, but in the event oil is found, all original tracts will be developed. It is reported that land and royalty owners are looking upon the proposal with favor. Due to the expense of these deep wells, and the unwillingness of operators to incur any offset obligations until they know the structure's actual potentialities, failure to unitize these blocks will result in expiration of leases and no more immediate drilling at Opelika.

Gregg County

The Humble Oil & Refining Co. and the Gulf Oil Corp. No. 1 Robertson, in the Marshall Mann Survey, a deep test on the eastern flank of the East Texas field, 2½ miles southwest of Longview, is now drill-

(Continued on Page 89)

Eastern Field Report

By STAFF CORRESPONDENT

Oriskany Sand Gas Reserves Given a Substantial Increase

PITTSBURGH, Pa., Feb. 7.—An interesting feature of the week in the Oriskany gas field in Kanawha County, West Virginia, was the finding of sufficient gas to make a paying well of the Linden Drilling Co. test on the John B. Kidd heirs farm in the Poca district, close to the Jackson County line. The top of the Corniferous lime was at 4,974 feet; Oriskany at 5,100 feet; first gas at 5,108 feet. It was drilled 26 feet into the sand and produced a maximum volume of 1,200,000 feet a day. Due to freezing in the sand the well shows about 600,000 feet of gas a day at the bottom. After a shot it is believed it will show a fair gauge with a back pressure on the sand.

This opens up additional territory, as it is about 3½ miles northeast of Sissonville, or 2 miles northeast of the large gas well on the Myrna and Homer Jarrett farm, which was brought in gauging over 20,000,000 feet a day. The Oriskany is dipping to the north as with Sissonville as a base, the Jarrett well was 79 feet down structure and the Kidd test 129 feet down structure, or a subsea elevation of minus 4,267 feet.

Another deep test in West Virginia is nearing completion. In the Otter district, Clay County, Pittsburgh & West Virginia Gas Co. topped Corniferous lime at 6,139 feet in the test on the Jesse Chapman farm. This places that formation at minus 5,151 feet, subsea. It is on the Gassoway Quadrangle, latitude 38 degrees, 37 minutes, 30 seconds, one-quarter mile up the first north fork of Boggs Fork east of longitude 81 degrees. It is east of Chestnut Ridge anticline and located after an extensive seismograph survey. Casing has been run to 6,157 feet and set. It is not a Halliburton measurement.

SOUTHEAST OHIO

In Southeast Ohio, McClay Brothers second test on the J. H. Orr farm in section 10, Licking Township, Licking County, reached the Lime pay at 2,309 feet, and gauges 3,000,000 feet of gas per day.

In Athens County, section 29, Rome Township, N. C. Leeper No. 23 O. O. Bryson was drilled through Maxton sand to 940 feet and was dry. In section 29, Lodi Township, A. D. Townsend test on the Joseph Bainey farm was drilled through the Berea to 1,730 feet without a pay. In section 3, Carthage Township, near Coolville, Ohio Fuel Supply Co. drilled No. 2 Eva Chase through the Keener sand to 1,292 feet, and it was dry.

In Washington County, Hall and Henning completed No. 5 J. S. McKee on Wingett Run, section 32, Ludlow Township, in Berea grit at 1,980 feet. It is a gas well, gauging 100,000 feet per day.

In Monroe County, Rich Fork Oil & Gas Co. completed a test on the Johnathan Hartshorn farm, section 19, Wayne Township, in Injun sand at 1,410 feet. It is a gas well, gauging 125,000 feet per day. In the same township, Gold Crown Oil & Gas Co. completed a very small well on the Deborah Lucas farm in Keener sand at 1,400 feet.

SOUTHWEST PENNSYLVANIA

In Southwest Pennsylvania, Greene Township, Greene County, Anna L. Garard completed deepening No. 1 M. Minor at 2,947 feet and has a 400,000-foot gas well from Elizabeth sand at 2,930 feet. In Center Township, Greene County, Carnegie Natural Gas Co. is down 836 feet in No. 3 J. H. Orndoff. South Penn Oil Co. is drilling at 940 feet in No. 12 Samuel Harvey. In Washington Township, Greene County, Equitable Gas Co. has rig up for No. 2 Sadie A. Connor on the No. 2 lease of this farm.

Washington County

In Somerset Township, Washington County, Wherry, Polonis and others were drilling at 545 feet on the Joseph Polonis farm. In this township, Victor D. Behm is drilling at 1,600 feet on the J. D. Amos farm.

In Morris Township, the Duquesne Gas Co. is down 475 feet on the J. E. Day farm. Dunn Mar Oil & Gas Co. is building rig for the Baldwin-Gunn test. The Carnegie Natural Gas Co. is down 735 feet in the H. H. Schussler test in Peters Township.

Deep Tests

On Chestnut Ridge, South Union Township, Fayette County, Potter Development Co., William E. Snee and others are drilling at 6,285 feet on the Summit Hotel lease, with the top of the Tully lime at 6,085 feet. In North Union Township, Greensboro Gas Co., on the J. R. Thompson farm, is down 125 feet, with a fishing job.

WEST VIRGINIA

Three small oil wells were completed in West Virginia. In Calhoun County, Chemical Oil Co. No. 3 D. M. Miller, in Sheridan district, was drilled to 2,191 feet, Injun sand. It is good for 6 bbls. a day, along with 160,000 feet of gas.

In Lincoln County, Guyan Oil Co. completed a second test on the C. & O. Railroad lease in Harts Creek district at 1,476 feet, Big Lime, and it is good for 8 bbls. a day.

In Wirt County, Fred Morehead test on the J. W. Hickman farm in Burning Springs district completed at 702 feet, in Cow Run sand, is showing for a 1-bbl. pumper.

Gas Wells

In Braxton County, Pittsburgh & West Virginia Gas Co. completed No. 7642, D. S. Woodyard farm, Otter district, at 2,406 feet. Big Injun sand lay at 1,882-2,010 feet, with gas at 1,884-91 feet, which gauged 130,000 feet per day before the shot and 215,000 feet per day after the shot.

In Cabell County, West Virginia Gas Co. completed deepening No. 1 G. C. Childers, in McComas district, at 3,300 feet. Drilling started at 3,015 feet with the top of the Brown shale at 2,895 feet, and extending to 3,255 feet. The final gauge on the gas was 426,000 feet per day from the shale.

In Gilmer County, Pittsburgh & West Virginia Gas Co. completed No. 7646, on the S. A. Hays farm, Glenville district, at 1,608 feet. It is a gas well from Big Injun sand at 1,483-1,573 feet, with 47,000 feet of gas per day at 1,548-51 feet.

In Mingo County, E. L. Lusher completed a gas well on the Noah A. Stepp farm in Kermit district at 3,700 feet. It gauged 146,000 feet per day from Brown shale at 2,460-3,365 feet, after shot.

In Ritchie County, J. W. Jonas completed No. 33 West Virginia Oil Co. tract in Grant district at 700 feet, Big Injun sand, as a gas well gauging 50,000 feet per day.

In Wayne County, Gragston Oil & Gas Co. completed a test on the Oliver Viers farm in Butler district at 2,154 feet. Berea sand at 2,123-42 feet, yielded 90,000 feet of gas per day.

In Wetzel County, Paul Amos and others test on the D. B. Shepard farm in Green district, is a small gas well in Injun sand at 2,110 feet.

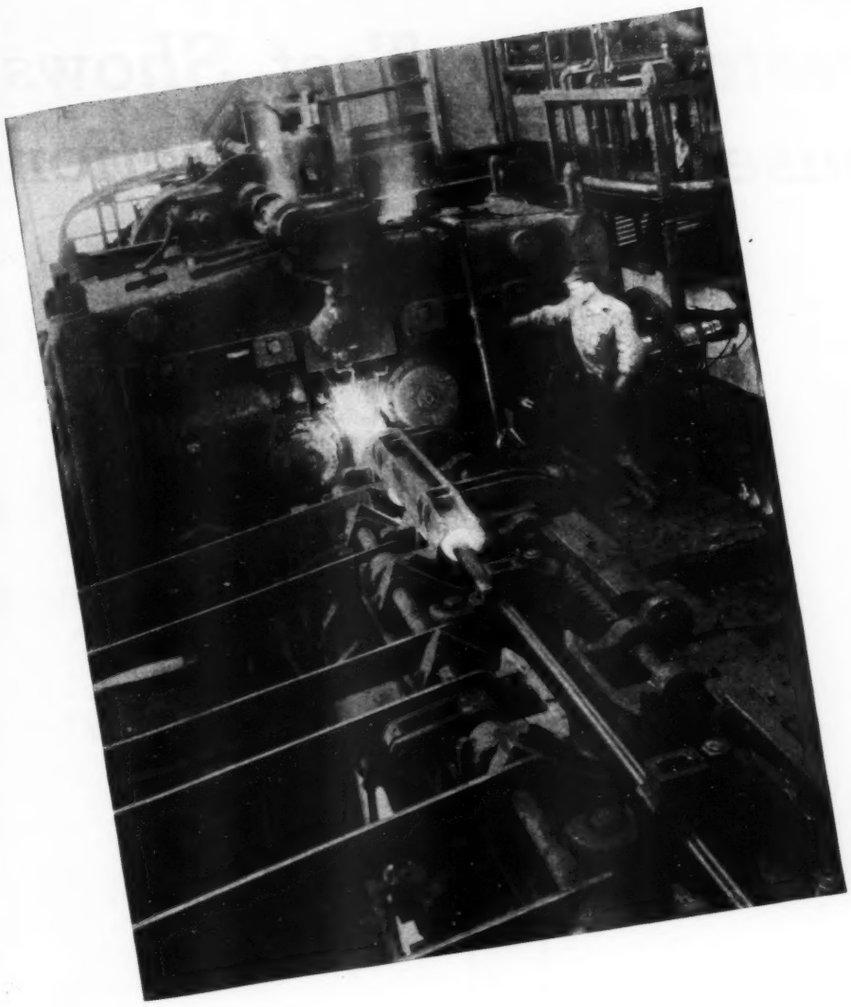
Oriskany Gas Field

In Kanawha County, over 32,000,000 feet of gas per day was added to reserves in the Oriskany gas pools in the Elk-Poca districts. United Fuel Gas Co. No. 4761 W. H. O'Dell, total depth of 4,993 feet, gauged 15,767,000 feet per day. Same company's No. 4780, on the L. K. Johnson and others lease, 4,796 feet deep, gauged 3,554,000 feet per day. This company's No. 4837, on the Nina Chandler farm, at 4,837 feet, gauged 9,313,000 feet per day. This is also in the Poca district.

In Union district, Kanawha County, West Virginia Gas Co. completed a gas well on the Ellen Good and others farm at 5,125 feet. Oriskany sand was topped at 5,093 feet, and the final gauge was 2,146,000 feet per day.

In the Poca district, over 2 miles north of Sissonville, the most northern test reached the lower Devonian. Joe Rubin topped Corniferous lime at 4,811 feet on the Lawrence Smith heirs, and is running casing. United Fuel topped Corniferous at 4,965 feet in No. 4765, Francis Dawson farm. In Union district, the same company topped that formation at 4,631 feet in No. 4770, J. A. McCormick farm.

The Measure of TIMKEN Refinery Tube Efficiency



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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Galveston Bay Test Shows Promise of Oil Production

HOUSTON, Tex., Feb. 7.—The exploration of state leases in inland bays and extending out into the Gulf of Mexico was apparently marked with success on the first attempt when Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State, situated in Galveston Bay, 1 mile off the Chambers County shore in Texas, prepared for a production test after coring a section of oil sand in the Frio formation. With the hole bottomed at 6,030 feet, casing was scheduled to be cemented on bottom followed the running of a Schlumberger survey. No drill-stem test was attempted. Slight showings were first logged at 5,915 feet, and oil sand at 5,956-66 feet. From 5,966 feet to the total depth, the section was composed of broken sections of sand and sandy shale, showing oil. The Discorbis was topped at 5,166 feet, Heterostegina at 5,494 feet, Round Marginulina at 5,618 feet, Flat Marginulina at 5,679-5,706 feet and the Frio at approximately 5,956 feet, which is the top of the full section.

The prospective pool opener is in the northwest corner of tract No. 118, in an area worked with reflection seismograph by the two companies early last year. If productive the well will call for an immediate offset to be drilled by Humble Oil & Refining Co., which is well protected with state leases. Based on top of the Frio, No. 1 State, is several hundred feet higher than a dry hole about 1½ miles to the north, drilled by George Anderson on the J. H. Fisher lease.

In the Dickinson field, Galveston County, Humble Oil & Refining Co. was testing No. 1 Peters, an important wildcat, 2 miles southeast of production. The hole was plugged back from a total depth of 9,355 feet to 8,367 feet. Seven-inch casing was cemented at 8,353 feet and perforated at 8,218-23 feet. Location has been made by the company for No. 1 Fream, another outpost test southeast of the Gillock area.

Hardin Partly Defined

The northwest limit of the Hardin field, Liberty County, was apparently defined by Jack Frazier No. 1 McMurtry, which is shut down at 7,794 feet after making a Schlumberger survey. Only slight showings were logged in the discovery horizon slightly below 7,600 feet. A small north extension was recorded with the completion of L. W. Wickes No. 1 Tullos, an average producer in sand at 7,606-33 feet.

Salt water intrusion in two wells in the Bay City field, Matagorda County, resulted in the wells being killed for recompletion. Hamman Exploration Co. No. 1 Crooker, completed July 1 at 8,160 feet, started flowing 25 per cent salt water, and is drilling ahead below 9,500 feet. Smith & McDannald No. 1 Schmidt, completed in December at 8,217 feet, flowed 20 per cent salt water and the hole has been plugged back to 8,107 feet. Geological markers released on this well show the Discorbis top at 6,375 feet, Heterostegina at 6,934 feet, Round Marginulina at 7,300 feet, Flat Marginulina at 7,330 feet and the Frio at 8,082 feet.

High Gas-Oil Ratios

High gas-oil ratio has delayed the completion of Humble Oil & Refining Co. No. 1 Pierce Estate, an important north extension well in the Friendswood field, southern Harris County. With the hole bottomed at 6,050 feet, perforations were made in the liner at 6,025-49 feet, and the well flowed 11 bbls. of oil per hour through a quarter-inch choke with tubing pressure 2,080 pounds and casing pressure 2,300 pounds.

Gulf Oil Corp. No. 1 Orange National Bank, on the southwest flank of the Orange field, Orange County, flowed 310 bbls. of oil in 12 hours through a quarter-inch choke with tubing pressure 920 pounds and casing pressure 1,000 pounds. The completion was made from a screen setting at 5,903-22 feet, total depth. It offsets the discovery well, and is the second producer completed in that area. On the northeast flank, Glenn H. McCarthy No. 2 E. W. Brown Estate was abandoned as a failure at 6,740 feet. Four additional wells are drilling but none has reached the testing stage.

In the Garwood area, Colorado County, Texas Crusader Oil No. 1 Broussard is nearing the expected pay horizon, and is being watched with interest. A drill-stem test at 5,887-5,913 feet tested 140 feet of drilling mud and 400 feet of salt water, and the crew is coring ahead. Location is in the Hill-Dufner Survey.

The third location for the newly opened Fairbanks field, Harris County, was made by H. E. William for No. 1 A. Vega, G. Williams Survey, about 5,900 feet southeast of the discovery well.

On the Peach Point Prospect, Brazoria County, Pure Oil Co. is building road to No. 1 Clemons State Farm, approximately 10,000 feet north of No. 1 Smith, a recent dry hole in the S. F. Austin 7½ League.

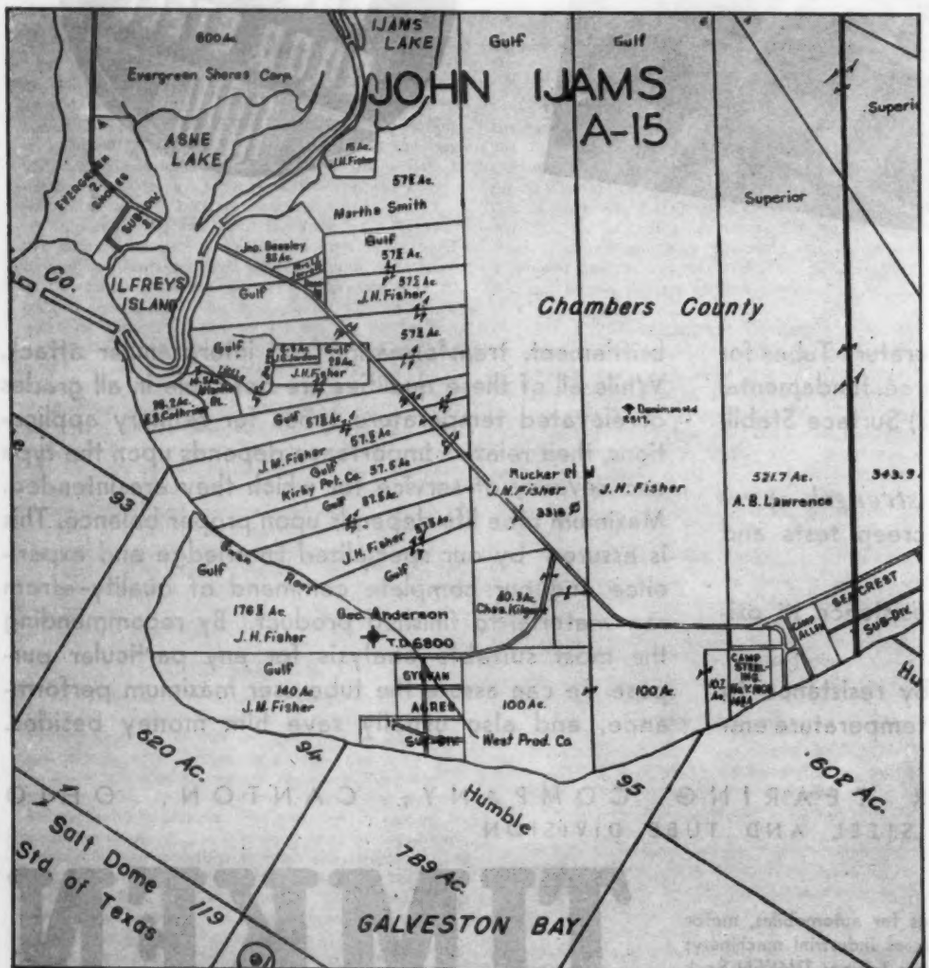
On a Major Structure

The second well drilled in the Villa Platte field, Evangeline Parish, Coastal Louisiana, has apparently proven this structure as one of major importance. Continental Oil Co. No. 1 Louisiana Central Land & Improvement Co., 1½ miles southwest of the discovery well, is bottomed in sand and shale at 9,085 feet and is waiting for orders after making a Schlumberger survey. The Sparta formation was topped at 8,643 feet and the sand section at 9,017 feet At 9,020-25 feet, 5 feet of sand showing 5 per cent saturation was recovered, and from 9,025 feet to the total depth, broken sand, and sandy shale showing oil, was logged.

New activity was started in the Abbeville field, Vermilion Parish, by Continental Oil Co. with the staking of No. 1 Robert Young, about 1,700 feet north of No. 1 Brookshire in section 66-12s-2e. This will be the fifth test drilled in the field, two of which were oil producers at approximately 7,800 feet.

W. T. Burton is reported to have obtained geophysical options on approximately 88,000 acres extending into Vernon, Sabine and Rapides parishes, and geophysical work is under way. This particular area has

(Continued on Page 106)



W. W. Zingery, Maps, Houston

A part of the Galveston Bay, showing location of prospective pool opener of Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State located about a mile offshore from Chambers County

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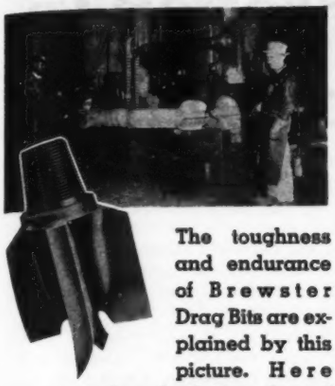

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Among Gulf Coast Drilling Contractors

Loffland Brothers may prove to have opened an oil field in Galveston Bay with the drilling of Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State, located over a mile offshore from Chambers County. The hole is bottomed at 6,030 feet and casing is being run for a production test. Approximately 50 feet of the Frio section, showing oil, was cored. The drilling of this test marks the beginning of an extensive search for oil reserves along the entire coast and extending out into the Gulf of Mexico. At the present time one test offshore from Jefferson County has reached a depth of 4,020 feet while piling is being driven by the Humble Oil & Refining Co. for its wildcat about a mile out in the Gulf. There are numerous permits on file for such tests and this phase of exploration is expected to be the feature of developments in the Coastal district during the year.

Nicklos Drilling Co., which brought in the discovery well of the Villa Platte field in Evangeline Parish, Coastal Louisiana, last year for Continental Oil Co., proved the structure as one of major importance with the drilling of the company's second test, No. 1 Louisiana Central Land & Improvement Co. The location is 1½ miles southwest of the discovery well. The hole is bottomed at 9,085 feet. Sand showing oil was topped in the Sparta formation at 9,017 feet, and was cored at intervals to the total depth. Contract was received from Continental Oil Co. for No. 1 Foreman, a wildcat on the Scott Prospect, several miles southeast of the Bosco field in Lafayette Parish.

Rutherford Drilling Co. resumed drilling in the Buckeye field, Matagorda County, for United North & South Development Co., has two rotaries running in the Van Vleck field for Skelly Oil Co. and is drilling below the discovery horizon in the West Saxet field, Nueces County. The latter test is about a half mile due west of the discovery well and is being drilled for Rutherford Oil Corp.

Glenn H. McCarthy has abandoned his No. 2 Brown on the northeast flank of the Orange field, has completed his second producer in Benavides field, Duval County, is nearing the pay horizon in the Palacios field for Atlantic Refining Co. and is preparing to retest his own No. 1 Broussard, a prospective pool opener in Jefferson County.

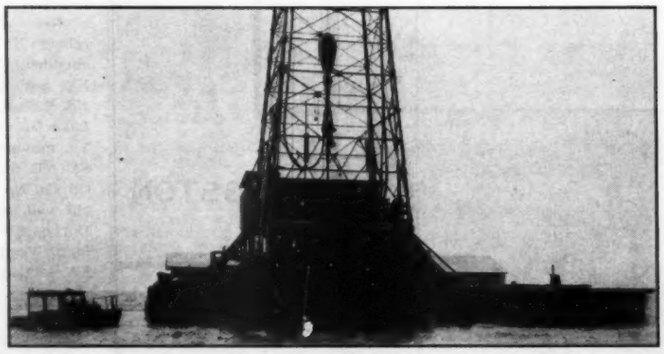
Hantho-Nelson, Inc., is running casing for a production test in Live Oak County in No. 1 A. McBell, which is being drilled jointly with J. Chew. The hole is bottomed in the Pettus sand at 5,076 feet and casing is being run without making a drill-stem test. Oil sand was logged at 5,073-76 feet. In Chambers County, No. 1 White, a wildcat, is being spudded for A. A. Cameron.

Rowan Drilling Co. is coring below 9,200 feet in Strake Petroleum Co.'s wildcat in Wharton County. Other operations include two wells drilling at Venice for Tide Water Associated Oil Co., one at Danbury for Rowan Drilling Co. and Shell Petroleum Corp. and two in the Satsuma and Fairbanks fields for Amerada Petroleum Corp. and Stanolind Oil & Gas Co.

O. W. Dyers has recompleted Atlantic Refining Co. No. 1 American Rio Grande in Hidalgo County for a large gas well from perforations at 8,634-42 feet. Other operations are reported for the same company in the McCampbell, Dickinson and Hardin fields.

George Echols has spudded J. W. Cain No. 1 Guy, a wildcat in San

(Continued on Page 92)



Set up of Loffland Brothers large diesel rig used in drilling Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State, located over a mile offshore from Chambers County, Texas, in Galveston Bay. The hole is bottomed at 6,030 feet and casing is being cemented for a production test

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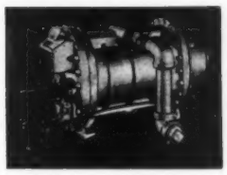

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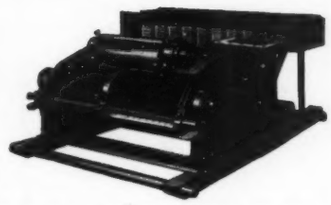

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Oklahoma Operations

By
DAL DALRYMPLE

Two New Horizons Proven in Cement Field, Caddo County

Two new pay horizons were proven in the Cement field, Caddo County, the past week as several tests sought some of the numerous producing zones in that busy area. Ohio Oil Co. and Ramsey Petroleum Co. No. 2 Lemon-2, SW SE SE section 2-5n-9w, found a new horizon in sand series at 4,099-4,242 feet and cleaned out for an estimated 30,000,000 feet of gas but had not been gauged. Same operators' No. 4 Lackey-2, NE SW NW section 11-5n-9w, plugged back from 4,232 feet to a new sand level at 3,424-45 feet and was showing an estimated 75 bbls. of oil with considerable water, which the crew was trying to shut off.

Major purchasers were the principal buyers at the Indian lease sale held at the Kiowa Agency in Anadarko last week. Bonuses totaling $13,609.52 were paid for 17 tracts in Tillman County, 11 tracts in Caddo County, and three tracts in Kiowa County. Land leased totaled 3,111.86 acres. Buyers included Ohio Oil Co., Gulf Oil Corp., Pure Oil Co., Magnolia Petroleum Co., Indian Territory Illuminating Oil Co., Carl J. O'Hornett of Tulsa and Stromberg & Helton of Frederick.

An oil and gas lease sale will be held at the Pawnee Indian Agency in Pawnee February 17. The offering includes 23 Kaw Indian tracts in Township 28-4e, Kay County, totaling 3,440 acres, and 29 Ponca Indian tracts in Township 25-1e, Kay County, totaling approximately 1,505 acres.

Wildcat Operations

Another wildcat in the Centrahoma area, Coal County, has been completed as a producer. It is Carter Oil Co. and others No. 1 Claytor, C W half NE SW section 27-2n-9, which was bottomed at 6,722 feet, plugged back to 6,480 feet and acidized. It swabbed and flowed 323 bbls. of oil in 15 hours after treatment, and after considerable difficulty was completed the past week, pumping 165 bbls. of oil daily. Production was from Viola lime, topped at 6,008 feet. Other tops: Wapanucka 4,077 feet; Union Valley 4,700 feet; Cromwell 4,733 feet; Mayes 5,320 feet; Sycamore 5,495 feet; Woodford 5,505 feet; Hunton 5,709 feet; Sylvan 5,908 feet; McLish 6,413 feet; Wilcox 6,716 feet.

Ed V. Parsons and others No. 1 Patzkowsky, C NW section 10-20-11w, Major County wildcat, was reported as an abandoned rig.

Robinson and others No. 1 Sadler, SW NW NE SW section 30-2n-5w, wildcat in Stephens County, was drilling at 100 feet on first report.

H. I. Grimes and others were building derrick at No. 1 Laney, NW cor. section 3-3s-18w, new Tillman County wildcat.

Ross & Patterson No. 1 Morhain Heirs, NE NE NW section 30-22-7, Pawnee County wildcat, had erected rig.

Location for a wildcat in Choctaw County was announced at Dr. Hardy and associates No. 1 fee, SE SE NW section 21-7s-15.

Oklahoma County

New activity in the Oklahoma City field, where operators are seeking pay in shallow formations above Wilcox sand, is reflected in completions of the past week, five new producers being recorded for the area.

Santa Fe Oil Co. and others No. 1 Slaughter, NE NW SW section 15-12-3w, had Simpson pay at 6,390 feet, total depth 6,529 feet, was acidized and flowed 1,523 bbls. of oil net through tubing in 24 hours.

Clark & Co. No. 1 Pierson, SW NE SW section 15-12-3w, had pay at 6,385 feet, total depth 6,501 feet, acidized and flowed 1,090 bbls. of oil in 24 hours, and on completion test flowed 692 bbls. of oil through tubing in 24 hours, with 5,000,000 feet of gas.

Stahl Petroleum Corp. No. 1 Miller, SE NW SW section 15-12-3w, topped Simpson pay at 3,685 feet, was bottomed at 6,520 feet, and flowed 815 bbls. of oil through tubing in 24 hours.

Southwest Petroleum Co. No. 1 Trosper, NE NE SE section 35-12-3w, flowed 275 bbls. of oil in 24 hours on gas lift and was completed at 6,387 feet, total depth.

Travis Petroleum Co. No. 1 Jordan Place, NE cor. section 35-12-3w, had Dolomite at 6,192 feet, total depth 6,365 feet, and made potential of 193 bbls. of oil, with 157 bbls. of water.

New work in Oklahoma County: Champlin Refining Co. No. 1 Henchee, SW NW NW section 35-12-3w, rig; Olson Oil Co. No. 2 Crawford, NW NE SW section 15-12-3w, rigging up rotary; Stahl Petroleum Corp. No. 1 Slaughter, NE NW SW section 15-12-3w, moving in tools; same company's No. 1 Crawford, NW NE SW section 15-12-3w, cellar and pits; same company's No. 1 Kenwood, NE SW SW section 15-12-3w, rigging up rotary; Clark & Co. No. 1 State, NE NE SW section 16-12-3w, rig on ground.

Pontotoc County

Mid-Continent Petroleum Corp. No. 11 Statler, NE SW SW section 2-1n-7, Fitts district, Pontotoc County, topped Bromide at 4,405 feet, total depth 4,571 feet, and produced 2,300,000 feet of gas, spraying oil from Viola lime.

Patsy Oil Co. No. 1 Meharg & West, C W half SE SW section 21-2n-6, topped Cromwell sand at 3,390 feet, total depth 3,502 feet, and pumped 109 bbls. of oil in 24 hours.

H. L. Blackstock and Magnolia Petroleum Co. No. 1 Steed, SE NE NE section 35-2n-6, an old well, was plugged back from 4,480 feet to 4,375 feet, was acidized, and pumped 25 bbls. of oil and 45 bbls. of water daily. R. W. Simpson and others No. 6 Woolley, NW NW SW section 27-2n-7, an old well, plugged back from 4,276 feet to 4,221 feet, and pumped 151 bbls. of oil daily, cutting 5 per cent water. H. L. Blackstock No. 4-A Harden, SE SE NW section 30-2n-7, an old well, plugged back from 3,635 feet to 3,003 feet, was shot and flowed 190 bbls. of oil in 24 hours. E. H. Moore No. 3-A Harper, NE SW NE section 29-2n-7, an old well, plugged back from 4,323 feet to 4,210 feet, and pumped 37 bbls. of oil daily, cutting 5 per cent water.

Harper Turner No. 1 Williams-Moore, NW NW SW section 20-2n-4, Roff district, was completed as a 2-bbl. pumper at 246 feet, total depth.

Barbara Oil Co. No. 2 Mount, section 36-5-7, North Steedman sector, had Gilcrease sand at 2,248 feet, total depth 2,316 feet, and flowed 100 bbls. of oil in 24 hours.

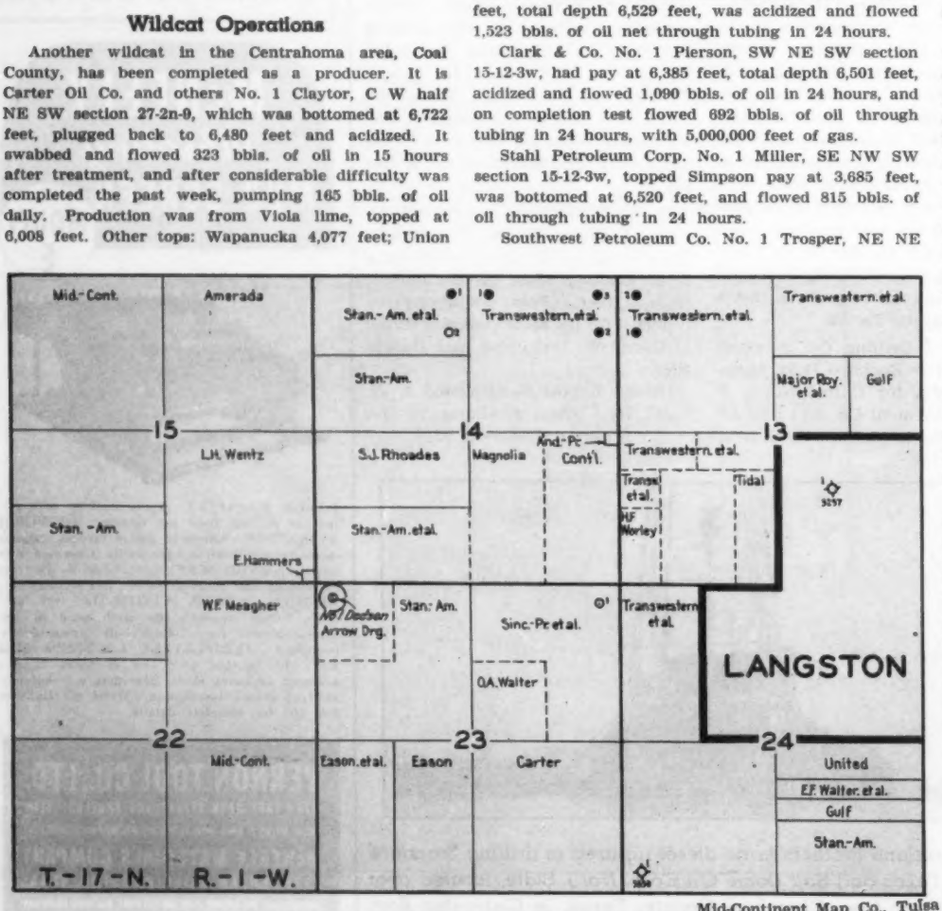
New work in Pontotoc County: Arrowwood and others No. 1-A Julius, SE NW NE section 6-4-7, spudded; United Corp. of Massachusetts No. 2 Burke, NW SW SE section 25-5-4, location; same operator's No. 7 Standridge, SW NW SE section 25-5-4, location; Lake Oil Co. No. 1 Standridge, NE SW NE section 25-5-4, moving in tools; same company's No. 1 Summers, SE NE SE section 26-5-4, cellar and pits; Richborn Oil Co. No. 1-A Fleming, SW SE SE section 12-5-4, an old well, rigging up to deepen; Keystate Oil Co. No. 1 Burke, SW NW SE section 32-5-5, drilling at 1,004 feet; Westheimer & Neustadt No. 3 Factor, SW SE SW section 25-5-7, driving piling in river.

Lincoln County

The Sac & Fox area continues to feature Lincoln County activity for the present, three completions being recorded in that district the past week.

Wilcox Oil & Gas Co. No. 8 Sac & Fox, NE NW SW section 15-14-6, had Prue sand at 2,921 feet, total depth 3,043 feet, and flowed 378 bbls. of oil in 24 hours through casing.

Same company's No. 1 Lucan, SW cor. section 11-



Mid-Continent Map Co., Tulsa

Arrow Drilling Co. outpost in section 23-17-1w, west of Langston, Logan County, was drilling below 3,400 feet

14-6, found Prue sand at 2,882 feet, was bottomed at 2,973 feet, and flowed 35 bbls. of oil in 24 hours through tubing.

Wagoner & Jones No. 1 Wray, SW SW SE section 10-14-6, topped Prue sand at 2,938 feet, total depth 3,018 feet, flowed 50 bbls. of 46.7-gravity oil through casing in 24 hours and on completion flowed 46 bbls. of oil through tubing in 24 hours.

Wilcox Oil & Gas Co. No. 2 De Lozier, NE NE NW section 15-14-6, was drilling below 1,700 feet. Helmerich & Payne No. 4 Fitch, SE SE NE section 15-14-6, was drilling below 1,200 feet. J. I. Doherty No. 1 Todd, SW SW NW section 23-14-6, was making hole below 2,835 feet.

Grant County

Another producer was completed in the Lamont area, Grant County, at Carter Oil Co. and others No. 1 Booker, NW NW SW section 16-25-3w. Wilcox sand was found at 5,416 feet, total depth 5,432 feet, water intruded, it was plugged back to 5,362 feet, drilled out to 5,424 feet and swabbed in. It flowed 434 bbls. of oil and 290 bbls. of water the first 8 hours; then flowed 2,238 bbls. of oil and 1,488 bbls. of water in 24 hours, with 8,750,000 feet of gas. It now is flowing 300 bbls. of oil and 100 bbls. of water daily through tubing choke, partly closed.

Estimated Daily Production

Estimated daily production of Oklahoma for the week ending February 5, and for the preceding week, was as follows:

	Barrels	
	Feb. 5	Jan. 29
Allen	6,125	5,775
Billings	7,900	7,975
Burbank	7,700	7,575
South Burbank	13,500	13,375
Balance Osage	19,500	20,500
Blackwell district	5,100	5,350
Bristow-Slick	7,250	6,950
Chandler	2,325	2,350
Crescent	7,975	8,750
Cromwell	3,300	3,325
Cushing-Shamrock	10,800	10,700
Duncan district	3,850	3,875
Edmond	8,250	7,750
Fish	4,150	4,125
Fitts	69,850	69,025
Jesse	4,150	4,850
Graham	5,600	5,750
Gray	1,125	1,300
Healdton	9,400	9,375
Hewitt	4,100	4,100
Holdenville	850	800
Keokuk	7,925	8,150
Konawa	1,375	1,475
Lucien	12,900	12,500
Moore	7,475	7,025
Oklahoma City	114,025	134,025
Olympic	6,425	6,600
Polo	775	725
Sasakwa and townsite	2,250	2,400
Sholem-Alechem	2,925	2,950
Seminole County:		
Bowlegs	10,425	10,400
Carr City	4,600	4,625
Earlsboro	5,600	5,400
South Earlsboro	550	675
East Earlsboro	6,200	6,225
Little River	9,450	9,475
East Little River	1,025	1,075
Maud	600	775
Mission	1,825	1,825
Seminole	8,525	8,500
East Seminole	1,775	1,925
Searight	3,750	3,700
Total Seminole	54,325	54,600
St. Louis-Pearson	18,550	18,475
Tatums	6,900	6,850
Tonkawa-Garber-Thomas	4,450	4,650
Wewoka	2,775	2,725
Yale-Jennings	3,775	3,750
Other pools	83,450	83,400
Total Oklahoma	533,100	553,875

Logan County

Ohio Oil Co. No. 1 Knight, SE NE SW section 12-17-1w, an old well in the Langston area, Logan County, was deepened from 5,056 feet to 5,088 feet, and made potential of 609 bbls. of oil with 1,700,000 feet of gas, from Wilcox sand.

Kay County

E. J. Shaffer and others No. 2 Hunchild, CSL SE NW section 8-28-1w, Braman area, Kay County, had Wilcox sand at 3,494 feet, total depth 3,536 feet, plugged back to 3,496 feet, was shot, swabbed 90 bbls. of oil in 6 hours and pumped 40 bbls. of oil and 80 bbls. of water daily.

Seminole County

Vierson Oil & Gas Co. No. 2 Factor, SW NE SW section 25-5-7, Seminole County, topped Gilcrease sand at 2,263 feet, total depth 2,281 feet, and flowed 100 bbls. of oil in 24 hours.

Commercial Drilling Co. No. 2 Huddleston, SE SE NE section 32-7-6, Dora pool, topped Boggy sand at 2,948 feet, total depth 2,981 feet, was shot and pumped 30 bbls. of oil and 50 bbls. of water in 24 hours.

First reports of new activity in Seminole County: Francis Oil & Gas Co. No. 2 Harris, NE NW NW section 4-6-6, spudded; A. Michaelson and others No. 1-A Shiflet, SE NW NE section 34-8-8, spudded; Merva No. 4 Johnson, SE NW NE section 10-10-8, location.

Osage County

Lewis Production Co. No. 6 Osage, SE NW SW section 27-24-7, Naval Reserve area, Osage County, had Bartlesville sand at 2,588 feet, total depth 2,669 feet, was shot and flowed 297 bbls. of oil daily.

Midco Oil Corp. No. 7 Osage, SW NW SW section 17-22-10, pumped 14 bbls. of oil and 50 bbls. of water daily and was completed at 1,912 feet.

Phillips Petroleum Co. No. 19 Osage, NE SE SE section 14-25-11, was dry and abandoned at 1,859 feet, total depth.

E. A. Babcock No. 2-A Osage, NW SE NE section 14-22-10, was dry and abandoned at 1,530 feet, total depth.

Pure Oil Co. No. 104 Osage, NE SE SW section 9-23-8, an old well being deepened, was drilling at 2,236 feet. Indian Territory Illuminating Oil Co. No. 3 Osage, SW NW NE section 27-25-11, an old well, was preparing to deepen.

Creek County

Sinclair Prairie Oil Co. No. 1-A Estate Land Co., NE NW NW section 10-17-7, Creek County, had Bartlesville sand at 2,654 feet, total depth 2,695 feet, and pumped 6 bbls. of oil and 88 bbls. of water daily.

L. B. Jackson No. 1 Thatcher, SE NW SW section 2-17-8, found Skinner sand at 2,430 feet, Bartlesville sand 2,763 feet, total depth 2,781 feet, plugged back to 2,772 feet and produced 1,000,000 feet of gas daily.

Bert Swift No. 1 Nantz, NE NW SW section 1-18-8, topped Red Fork sand at 2,382 feet, total depth 2,433 feet, and produced 1,500,000 feet of gas daily.

C. W. Johnson and others No. 1-B Ring, NW SW SW section 17-18-9, had sand at 2,622 feet, total depth 3,010 feet, plugged back to 2,630 feet, and produced 1,000,000 feet of gas daily.

L. B. Jackson No. 2 Alberta, NW NE NW section

(Continued on Page 87)

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Central West

By STAFF CORRESPONDENT

Pure Gets Five Good Wells in Richland County, Illinois

MATTOON, Ill., Feb. 7.—Eight new wells, with a combined initial production of 2,546 bbls., and one dry hole, were completed in the Illinois Basin fields in the past week and 16 new operations were announced. The Pure Oil Co. completed five of the past week's crop of wells all in Richland County.

Pure Oil Co. No. 8 J. O. Coen, C W half SW NW section 9-3n-9e, flowed 508 bbls. in 24 hours from pay at 2,950-60 feet, total depth 3,000 feet.

Pure Oil Co. No. 9 Coen, C W half NE SW section 4-3n-9e, Richland County, flowed 664 bbls. the first 24 hours from pay at 2,945-51 feet, and 2,953-57 feet, total depth 3,000 feet.

Pure Oil Co. No. 11 Coen, C W half NW SW section 4-3n-9e, made an initial flow of 535 bbls. from pay at intervals from 2,932 to 2,965 feet, total depth 3,000 feet.

Pure Oil Co. No. 2 Montgomery, SE cor. SW SW SE section 8-3n-9e, Richland County, started at 384 bbls. natural flow from pay at 2,940-47½ feet and 2,959-61 feet, total depth 3,000 feet.

Pure Oil Co. No. 3 Montgomery, C W half NW SE section 8-3n-9e, had pay at 2,941-42 feet, and 2,958-63 feet, total depth 3,000 feet. It flowed 157 bbls. in 24 hours.

In Clay County, Olson Drilling Co. No. 1 Irwin estate, C N half SE NW section 12-2n-7e, had Fredonia lime at 3,055 feet and pay at 3,060-65 feet. It pumped 200 bbls. the first day but settled to 120 bbls. two days later.

In Jefferson County, Benedum-Trees, Inc., No. 1 Owens, NW SE NW section 23-4s-3e, was dry and abandoned at 3,150 feet. Fredonia lime was topped at 3,061 feet.

In Marion County, Cypress Oil & Gas Co. No. 6 Adams, NW cor. SW SW SW section 28-4n-1e, found Benoist sand at 1,445-51 feet. The well pumped 38 bbls. of oil and 16 bbls. of water on initial test.

In Clinton County, Adams Oil & Gas Co. No. 2 Schmitz, NE SE NE section 2-1n-1w, shot Benoist sand at 1,350-78 feet with 10 quarts, and it made a 60-bbl. initial producer.

New Operations

In Wayne County, Pure Oil Co. made location for No. 2 C. B. Clay, C W half NE NW section 27-1n-7e.

In Marion County, W. D. Sheddon and others made location for No. 1 Pawlica, SW NE SW section 33-2n-1e.

In Clay County, Pure Oil Co. had rig up for No. 2 B. Travis B, 500 feet from west and 330 feet from north lines of section 33-3n-8e.

In Richland County, Pure Oil Co. No. 5 Snyder, C E half NW SW section 3-3n-9e, is a location; Pure Oil Co. No. 1 C. T. Montgomery B, C E half SE NW section 4-3n-9e, derrick up; No. 2 C. T. Montgomery B, C W half SW NW section 4-3n-9e, location; Pure Oil Co. No. 8 Palmer-Taylor, 494 feet from north and 992 feet from east lines SE quarter section 5-3n-9e, rigging up rotary; Pure Oil Co. No. 1 Brant, 180 feet from north and 1,445 feet from east lines of SE quarter section 17-3n-9e, building derrick; Pure Oil Co. No. 2 H. E. Burr, 1,165 feet from south and 330 feet from west lines NE quarter section 17-3n-9e, location. Pure Oil Co. No. 1 H. E. Rings, 25 feet from south and 180 feet from east lines of NW quarter section 17-3n-9e, location.

In Clinton County, Shell Petroleum Corp. No. 1 Pitchford, NE NW SW section 1-1n-1w, is a location; Shell Petroleum Corp. No. 1 Criley & Felton, SW SW NW section 1-1n-1w, rigging up rotary; Adams Oil & Gas Co. No. 4 Schmitz, NE NE SE section 2-1n-1w; location; Taxman & Self and others No. 1 Hauseman, SE NW NE section 12-1n-1w, derrick; Santa Fe Oil Co. No. 3 Kohrman, CEL NE SE section 5-1n-3w, location.

In Montgomery County, Meyers and others made a location for No. 1 Klekamp, 1,400 feet from south and 1,060 feet from west lines SE quarter section 29-8n-5w.

Important Drilling Wells

In Jefferson County, Nollem & Benoist were underreaming 6-inch casing in No. 1 Kelly, NE NW NE section 25-4s-2e, which is at a total depth of 2,431 feet. Sturbois & Tomberlin spudded No. 1 Morse, NW cor. SW section 6-2s-2e.

In Clinton County, Shell Petroleum Corp. was awaiting the arrival of a machine for No. 3 Criley, SW NE NE section 2-1n-1w. Group Oil Corp. No. 1 Jolliff school lot, SE cor. SW SW SW section 1-1n-1w, had Benoist sand at 1,341-74 feet, total depth 1,376 feet, and the hole filled 900 feet with oil. The crew was rigging up pumping outfit. The well is on a very small piece of ground. Adams Oil & Gas Co. No. 3 Schmitz, NW NE SE section 2-1n-1w, had Benoist sand at 1,327-48 feet, and set 7-inch casing at 1,323 feet preparatory to testing. Noll & Connery No. 1 Barth, NW SE SW section 12-1n-1w, was coring ahead after finding a good oil showing in Benoist sand, topped at 1,375 feet. Holle & Willis No. 1 Hughes, C N half NE NW section 18-3n-2w, was drilling at 910 feet.

In Marion County, W. C. McBride, Inc., No. 1 Clow, SW SW SE section 29-2n-1e, was at a total depth of 1,644 feet and the 6-inch casing was being underreamed. Heimerich & Payne No. 1 Stephens had McClosky lime at 2,617-19 feet, cored to 2,705 feet, and was drilling ahead. Mahutska Oil Co. No. 1 Nichols, CEL SW SE section 12-4n-4e, was fishing for tools, total depth 2,875 feet.

In Wayne County, B. C. Morrison No. 1 Gibbs, CNL section 14-1n-9e, was drilling at 2,570 feet.

In Clay County, Shelby Oil & Gas Co. (formerly reported Southern Illinois Petroleum Co. and others) No. 1 Nodecker, NW SE SW section 23-3n-7e, total depth 2,933 feet, was being rigged up for deeper drilling. Vermilion Oil Co. No. 1 J. B. Smith and others, CNL NW SW NW section 20-3n-8e, was drilling at 300 feet. Pure Oil Co. No. 1 Mitchell, C N half SE SE section 5-2n-8e, set 9⅝-inch casing at 216 feet.

In Richland County, Southern Illinois Petroleum Co. No. 2 Allard, CEL SE NW NW section 16-3n-9e, was drilling on iron at 2,945 feet. Ritz Oil Co. No. 1 Jenkins, 712½ feet from north and 1,100 feet from west lines of NE quarter section 17-3n-9e, was drilling at 2,148 feet. Max Pray and others No. 1 King, SW SW SE section 21-3n-9e, total depth 3,121 feet, had Ste. Genevieve lime top at 2,995 feet and set 7-inch casing at 3,025 feet. Plug was being drilled. Mammoth Producing & Refining No. No. 1 Bell, NW NE SW section 28-3n-9e, was running 7-inch casing to 3,029 feet and will complete with standard tools. Papoose Oil Co. No. 1 Lynch, SW SW NE section 5-3n-10e, had Cypress sand at 2,741 feet and sand at 2,777-92 feet, which was dry, and was coring at 3,005 feet. Bur-Kan Oil Co. and others No. 1 Allen, C SW NW section 27-4n-10e, flowed and swabbed a total of 1,800 bbls., but will acidize before completing. This test, reported last week, had pay at 3,036-41 feet and flowed 827 bbls. the first 104 hours.

In Effingham County, S. Holles and others No. 1 Haarman, NW SE SW section 32-8n-6e, shut down at 2,690 feet and will be drilled to 4,200 feet for a test of the Devonian lime and heavier machine was being moved in for the test. Kingwood Oil Co. No. 1 McWhorter, C E half SE NW section 15-6n-6e, spudded and shut down.

In Fayette County, Carter Oil Co. No. 1 Dove, 485 feet from north and 990 feet from west lines SE quarter section 15-8n-3e, was drilling at 320 feet in sandy lime. Redgraves and Ryan No. 1 Jones, C S half NE section 24-9n-1e, was coring ahead from 1,448 feet.

In Jasper County, Hoffman No. 1 King, SW NW NW section 20-8n-10e, had a small showing of oil at 4,040 feet, and was coring at 4,128 feet. Top of the Devonian lime was found at 4,040 feet.

In Jackson County, Stanolind Oil & Gas Co. No. 1 Lenier, NE NW SW section 20-7s-4w, had Devonian top at 2,329 feet and recovered a slightly bleeding core at 2,355-58 feet, and was drilling at 2,531 feet.

In Randolph County, Mabee Consolidated Corp. and others No. 1 Wilson, CSL NE SE NE section 3-4s-5w, was drilling at 3,368 feet.

In Washington County, Betterman and others No. 1 Jesse, C SE NE section 16-3s-2w, spudded in.

INDIANA

EVANSVILLE, Ind., Feb. 7.—The new drilling campaign in Indiana, which uncovered pools in Vigo County last year, but has not resulted in any other discoveries in the basin area in the state, is increasing in volume and spreading out. Recent results, however, are not very encouraging.

In Perry County, Arthur Grieve and others abandoned No. 1 H. H. Metz, SW cor. SE section 9-6s-3w, after getting a hole full of water in Bethel sand at 457 feet.

In Perry County, Herman H. Waninger No. 1 Waninger, SW NW NE SE section 12-6s-3w, was dry and abandoned at 720 feet. Jett sand was penetrated at 381-93 feet. Roeder and Albertson No. 2 Rissler, SW cor. SE SW NE section 12-6s-3w, was acidized at 342-60 feet, total depth 365 feet, but made no oil showing and was abandoned. Charles E. Dice No. 3 Ora Dixon, SE cor. SW SE SE section 3-5s-3w, had Jackson sand at 337-40 feet, shot it with 5 quarts, and it pumped 10 bbls. of oil in 24 hours. Some water is showing.

In Knox County, Worthington Petroleum Co. No. 1 Ford, SE cor. SW SW SW section 4-5n-7w, topped Devonian lime at 2,160 feet, and Niagara lime at 2,189 feet, and abandoned the hole as dry at 2,375 feet. No showings were reported.

In Daviess County, Midwest Development Co. No. 2 Sam Lipe, C NE SW section 9-2n-5w, was dry and abandoned at 736 feet.

The drilling reports for the area show the status of the following wells:

In Knox County, National Consumers Oil Co. No. 3 Maude Wolfe, NE SW NW NE section 13-5n-10w, was drilling at 110 feet.

In Pike County, J. W. Havens and others drilled to 860 feet and shut down No. 1 Dean, C E half SW NE section 24-1s-8w. Murphy Oil Co. No. 3 Essie Stewart, SW cor. NW NW NW section 17-1n-9w, an old gas well deepened from 1,180 feet, is shut down at 1,285 feet. Midwest Development Co. No. 6 Campbell, C NW NW section 5-1s-9w, was drilling at 727 feet. C. L. Trussler No. 1 A. G. Barrett, SW SW SE section 26-1n-7w, had Mississippi lime at 1,208 feet, and was shut down at 1,213 feet. Inland Petroleum Co. No. 3 Craig, NW SW NW section 20-1n-7w, topped Mississippi lime at 1,204 feet and had a rainbow show of oil and a hole full of water at 1,273 feet, total depth. The 5-inch casing was being underreamed to 1,204 feet.

In Vandenburgh County, K. R. Bixby made a location for No. 1 Fieken, C S half SE SW section 17-5s-11w.

In Sullivan County, Dome Gas Co. spudded and shut down No. 1 Hauger, 500 feet from south and 350 feet from west lines of NE quarter section 19-9n-9w. Carter Oil Co. No. 1 Lindley, C E half SE SW section 13-8n-11w, had Mississippi lime at 1,365 feet and was drilling at 1,445 feet. Joe Bernstein No. 1 Dodd, NW

(Continued on Page 88)

By MITCHELL TUCKER

Ordovician Wildcat in Pecos County Makes Big Brief Flow

FORT WORTH, Tex., Feb. 7.—Thirty-nine locations were made in West Texas last week, two of which were wildcats, one each in Gaines and Sutton counties. Rather definite evidences of a new deep Ordovician oil pool in northern Pecos County headed all other high points during a very active week in the Permian Basin.

Ordovician Strike

Another flush flow of oil from the Ordovician level in Magnolia Petroleum Co. No. 1-A McKee, wildcat, in the Imperial area of northern Pecos County, was made last week. All doubt seems removed that the well will open the third deep oil producing structure from the Ordovician beds in the southern portion of the West Texas Basin. After swabbing and testing during the week, following the 45-minute flow several weeks ago, before tubing clogged, the well again headed up, slopped over, and began flowing steadily. For the first five minutes flow was into the pits, and then was switched to tanks. It gauged 64 bbls. the first 15 minutes, 27 bbls. the next 15 minutes, and continued to flow at a steady but diminishing rate for over one hour. Gas was estimated to be around 1,500,000 feet per day. As the week closed, the well continued to make 30 bbls. hourly by bailing. A fluid level of around 200 feet from top had been maintained for a long while, and after bailing down to 450 feet it kicked off to make the second large flow. Present total depth is 5,294 feet in the Simpson (Middle Ordovician). This well attracted much attention several weeks ago when it topped the Simpson very high structurally as compared with Crane County Ordovician producers. Although some production in the Sand Hills field of Crane County is from the Simpson, its prolific production has been from the Ellenburger (Lower Ordovician). No announcement has been made by operators yet as to whether or not this well will be deepened into the Ellenburger, and it will probably not be if a commercial producer is made in the Simpson.

Some 60 miles southwest of the Imperial area (which is just south of the Pecos River) Pecos County's second bid for a new Ordovician field continues promising. Stanley A. Thompson No. 1 Elsinore Cattle Co., section 53, Block D, G.C.&S.F. Survey, set 5½-inch casing at 7,028 feet and cemented preparatory to testing irregular saturated zones from 7,038-7,128 feet in the Simpson horizon. Plug has been drilled with rock bit on tubing and swabbing is to begin soon.

In Brewster County, another closely watched Ordovician test, Floyd C. Dodson No. 1-A Texas American Syndicate, is drilling at 7,130 feet in shale and lime after topping the Simpson about 100 feet lower subsea than Magnolia's McKee in the same formation.

Moore Brothers No. 1 Paul Perner, in western Crockett County about 25 miles southeast of the Yates field, was abandoned at 9,105 feet after a long but unsuccessful search for Ordovician production. Location was in the NW quarter of section 37, Block 2, H.&G.N. Survey.

North Basin Area

In the Northern Basin area three outposts attempting to define the Slaughter field of southern Hockley County should be at the testing stage soon. The Denver area of southern Yoakum is receiving two new completions, one an offset to the recent mile and one-half southeastern extension to the field. Shell Petroleum Corp. No. 1-B Baumgart, gauged 487 bbls. per day on an official potential gauge, with 2,240,000 feet of gas, total depth 5,010 feet.

In the Bohago area of Yoakum County, where there is now one lone producer, Bahago Oil Corp. and L. C. Harrison, are drilling No. 1 West 2 miles southeast of the discovery well and now coring below 5,163 feet. Ohio Oil Co. No. 1 Clawater is drilling below 5,000 feet 1 mile southeast of the Bohago discovery. Gulf Oil Corp. No. 1 Dixon is drilling below 7,800 feet 3½ miles southeast of the Bohago area.

Amerada Petroleum Corp. returned attention to the Seminole field of central Gaines County when its No. 1 T. S. Riley, one-quarter mile north extension, after a 1,000-gallon acid treatment, flowed 165 bbls. of oil in 12 hours and about 500,000 feet of gas from a total depth at 5,047 feet.

Honolulu Devonian Oil Co. and Cascade Petroleum Co. are staking No. 2 T. B. Duggan as a short extension prospect in the Duggan field of southeast Cochran County.

A 15- to 18-mile strip extending northeast from Jones County's deepest pool at Avoca, and crossing four counties—Jones, Shackelford, Haskell and Throckmorton—has become the center of the biggest play of recent months in the West Central Texas district.

A new pool on this strip, in southeastern Haskell County, was assured from a shallow pay at 1,698 to 1,721 feet when Brown Eagle Oil Co. and S. B. Roberts No. 1 T. G. Hendrick pumped 30 bbls. of oil and 4 bbls. of water, the latter of which had been exhausted at the end of a 24-hour gauge. It is in subdivision H. A. Rodriguez Survey.

Forest Development Corp. assigned Ungren & Frazier of Abilene 160 acres out of its 13,000-acre block to drill a Palo Pinto lime test in section 14-3, H.&T.C. Survey, Shackelford County. Fain-McGaha Oil Corp. of Wichita Falls announced plans to drill another to the Palo Pinto, Avoca pay, between a wildcat being drilled by Superior Oil Corp. in Haskell and one of Humble's in southwestern Throckmorton County.

The Avoca area's deepest test, Haterius and Ungren & Frazier No. 1 Olson, 2 miles northwest of production, was credited with a high top of Ordovician, drilling into Ellenburger lime at 5,198 feet. It is the first attempt at the deeper pay in the vicinity of Avoca. It failed to find oil in the Palo Pinto lime.

Eastern Callahan County's Ordovician test, Phillips Petroleum Co. No. 1 Cozart, logged 2½ bailers of sulfur water hourly from the Ellenburger, 106 feet into the lime, at 4,140 feet, and was abandoned at that depth.

On the credit side of the ledger, Lone Star Gas Co. deepened No. 1 Cozart in Eastland County to give nearly a mile extension to the Van Parmer pool, the lone Ellenburger producing spot in West Central Texas. The well flowed 288 bbls. on a Railroad Commission gauge after a 1,000-gallon acidization at a total depth of 3,971 feet.

Among interesting wildcats spudded during the week was one by Owens-Snebold Oil Corp. and A. C. Varner, No. 1 J. H. Milsap, a mile south of the most southerly production in Fisher County's Rotan pool. It will seek the Rotan lime pay at 3,100 feet. The test is 2 miles northwest of McCaulley in section 61-1, H.&T.B. Survey.

C. E. Hyde and associates of Fort Worth let contract to Hantho-Nelson, Inc., of San Antonio for the drilling of a 4,000-foot Nolan County wildcat, 4 miles southeast of Sweetwater, on the E. W. Withers ranch in section 65-21, T.&P. Survey.

PANHANDLE DISTRICT

Completions and locations continue to decrease in the Panhandle district, and last week a new low was reached for the last several months. Eleven oil wells were completed, two in Carson County, two in Gray County and seven in Hutchinson, with a combined initial potential of 3,941 bbls. No gas producers were reported as complete.

Of the eight new tests proposed, two in northern Collingsworth County, at the extreme southeastern tip of the Panhandle gas area, will attempt to extend the field into that county. They are Fain Johnson No. 1 Taylor, southwest quarter of section 10, Block 17, H.&G.N. Survey; and J. D. White No. 1 Wischkaemper, southeast quarter of section 58, Block 16, same survey.

Sherman County's bid to enter the oil producing counties of the Texas Panhandle continues strong. Indian Territory Illuminating Oil Co. No. 1 Mollie Davis, section 404, Block 1-T, T.&N.O. Survey, about 20 miles north of Dumas in northern Sherman County, has definitely opened a new sweet-gas producing area from Dolomite found above 3,100 feet, with increases down to about 3,200 feet, at which point the well tested about 30,000,000 feet. The hole is being deepened below 3,300 feet to continue the search for oil (its original objective).

WEST TEXAS COMPLETIONS

(24-hour tests)

Cochran County

Devonian Oil Co. No. 1 Duggan, 4,915-5,044 feet, 267 bbls. Inglewright & Fogelson No. 2 Houston, 5,028-73 feet, 611 bbls.

Crane County

Gulf Oil Corp. No. 27 Crier-McElroy, 2,800-3,010 feet, 431 bbls. Humble Oil & Refining Co. No. 16 Tubbs, 4,390-4,430 feet, 3,173 bbls.

Ector County

Barnsdall Oil Co. No. 5 F. Foster, 4,060-4,179 feet, 970 bbls.; No. 7 H. Foster, 4,128-4,228 feet, 676 bbls. Devonian Oil Co. No. 3-E Scharbauer, 4,160-95 feet, 1,056 bbls. Gulf Oil Corp. No. 68 Goldsmith, 4,170-4,200 feet, 1,664 bbls. Phillips Petroleum Co. No. 4 Kloh, 4,024-4,220 feet, 444 bbls. Stanolind Oil & Gas Co. No. 10 Roberts, 4,167-4,255 feet, 747 bbls. Sunray Oil Co. No. 2 Johnson, 4,070-4,278 feet, 862 bbls.

Fisher County

Montour Production Co. No. 2 Smith, 3,563-73 feet, 409 bbls. Southern Oil Co. No. 1 Bacot, dry and abandoned at 4,015 feet. Tide Water Oil Co. No. 3 E. L. Smith, 3,516-17 feet, 427 bbls.

Gaines County

Phillips Petroleum Co. No. 1 Riley, dry and abandoned at 4,460 feet. Shell Petroleum Co. No. 1 Cox, dry and abandoned at 4,995 feet.

Howard County

Moore Brothers Corp. No. 3 T.&P. Land Trust, 2,618-2,830 feet, 539 bbls. Shasta Oil Co. No. 13 Dodges, 2,420-2,765 feet, 1,465 bbls.; No. 2-B Texas Land & Mortgage Co., 2,664-2,850 feet, 1,444 bbls.

Loving County

Barnett Petroleum Co. No. 1-A Johnson, dry and abandoned at 3,967 feet.

McCulloch County

E. L. Noxon No. 1 R. L. Pearce, dry and abandoned at 1,001 feet.

Pecos County

E. W. Francis No. 1-A Hodden Estate, 2,820-2,978 feet, 9,000,000 feet gas. Two States Oil Co. No. 1 Magnolia, 1,780-1,890 feet, 266 bbls.

Winkler County

Falcon No. 15 McCuthean, 3,250-3,371 feet, 140 bbls. Humble Oil & Refining Co. No. 26 A. Colby, 2,782-3,088 feet, 1,347 bbls.; No. 20 C. Walton, 3,025-31 feet, 1,499 bbls.; Magnolia Petroleum Co. No. 122 Walton, 2,830-2,936 feet, 1,349 bbls.; No. 126 Walton; 2,835-2,946 feet, 725 bbls.; No. 127 Walton, 2,830-2,955 feet, 1,436 bbls.

(Continued on Page 90)

California Field Report

By
L. P. STOCKMAN

California Oil Production Is Highest Since Early in 1930

LOS ANGELES, Calif., Feb. 7.—Production of the Wilmington field of Los Angeles Basin reached a new high in the past week when production passed the 87,350-bbl. mark, and supplanted Kettleman North dome as the state's largest producing field. As a result state production bounded up to 737,450 bbls. per day, the highest sustained point reached since the week ending February 21, 1930, when it averaged 806,180 bbls. per day. At the 1930 peak, operators began to curtail their output, and brought production down to 723,250 bbls. on March 1, and further cut it to 660,250 bbls. on March 9. There is no similar move now under way, but Ernest Pyles of Hancock Oil Co., chairman of the Wilmington field committee, hopes to secure approval of a plan to limit production in that field to approximately 25 per cent of its potential rating. This move was blocked by the refusal of one operator to conform with the proposed program.

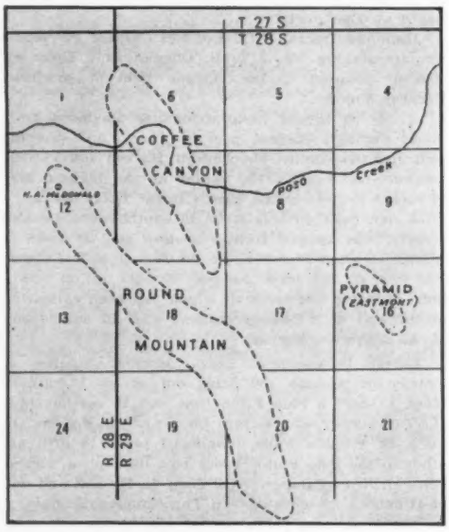
California's crude oil quota as recommended by the Bureau of Mines and adopted by the Central Committee of California Oil Producers, official curtailment group, is 693,700 bbls. per day in February, but actual production will greatly exceed allowable if operators in the Long Beach portion of the Wilmington field continue a wide-open flow of their wells. Not one of the 10 wells completed in that part of the field is being curtailed, due to the inability of operators to agree on a definite plan of restriction. The umpire's potential daily production of these wells aggregates 29,125 bbls. per day.

Approximately five new wells are expected to be completed in the Long Beach area within a fortnight, and if the present practice of flowing wells is continued the field may reach 100,000 bbls. per day and state production show a relative gain. The large flowing wells in the eastern end of the field are an indication of what may be expected during the next 90 days with additional aggressive drilling. Litigation involving tidelands and filled-in land has had a tendency to restrict development work in certain areas until the existing title to the acreage is validated. All of the large flowing wells completed during the past two weeks are in the southeastern end of the Long Beach harbor area, east of Terminal Island, and with one exception south of Cerritos Channel No. 2. Completion of these wells definitely proves Terminal Island holdings of Union Pacific Railroad Co. and Southern California Edison Co. as unusually prolific, and preparations have been started to drill on the north and west sides of the latter's property in addition to projected directional drilling beneath the steam generating plant of Southern California Edison Co.

Wilmington Completions

Three unusually large wells were completed in the Wilmington field during the current week in addition to eight others which showed smaller initials. No. 2 Union Pacific of Bankline Oil Co. was completed flowing 7,348 bbls. of 24.4-gravity oil daily from 3,900 feet, producing from both the Upper and Lower Terminal zones through two beans, one of which was 60/64-inch and the other 33/64-inch. The Lower Terminal zone is estimated to be producing 2,700 bbls. of 27.5-gravity oil and the Upper Terminal zone 4,648 bbls. of 21.2-gravity oil. A total of 1,740,000 feet of natural gas is being produced from both zones. Bankline Oil Co. also completed No. 4 Classification Yards, pumping 101 bbls. of relatively clean 17.2-gravity oil daily from 3,468 feet. This well is in the northwestern end of the Wilmington field within the corporate limits of the city of Los Angeles.

General Petroleum Corp. No. 2 Southern Pacific was completed flowing 5,760 bbls. of clean 25.8-gravity oil initially from 4,146 feet from both the Upper and Lower Terminal zones. It was finished flowing through a 55/64-inch bean, subsequently increased to 1½-inch. No. 6 Harbor Community which the company completed in the previous week flowing 2,071 bbls. of 25.3-gravity oil daily from 3,890 feet is now flowing 5,550



As a result of drilling operations during 1937 prospectors discovered the new Pyramid field in Kern County and proved up new extensions in the northern parts of Round Mountain and Coffee Canyon

bbls. per day. No. 1 Harbor Community which General Petroleum Corp. recently completed doing 1,860 bbls. initially from 3,939 feet, is now flowing 3,460 bbls. daily. Union Pacific Railroad Co. No. 78, a second line offset to General Petroleum Corp.'s Ford lease and located just inside the city of Los Angeles, flowed 4,902 bbls. of very clean 22.9-gravity oil daily from 3,620 feet. Same company's No. 79, two sites north of No. 78, was completed flowing 791 bbls. of clean 20.1-gravity oil daily from 3,594 feet. In the northeastern end of the holdings in the Wilmington field Union Pacific Railroad Co. completed No. 1-E flowing 296 bbls. of 21.2-gravity oil daily from 3,125 feet, while its No. 2-E was brought in flowing 695 bbls. of 22.9-gravity oil initially from 3,151 feet. The oil from both wells is exceptionally clean.

Superior Oil Co. finished No. 1 San Carlos flowing 163 bbls. of 15.2-gravity oil daily through a 46/64-inch bean from 3,119 feet.

Richfield Oil Corp. completed No. 1 Rio Grande Terminal, pumping 195 bbls. of 16.6-gravity oil daily from 3,650 feet after finishing the hole with 367 feet of 6⅝-inch liner including 327 feet of 60 mesh landed at 3,348 feet. This is the most northeasterly producer in the Long Beach harbor section producing from the Ranger zone, but is cutting 5 per cent mud, water and sand. Macson Oil Co. No. 55-2 Community has been completed pumping 128 bbls. of 16.5-gravity oil daily from 3,638 feet. Lokern Development Co. No. 1 Buchanan was good for 98 bbls. of 16.6-gravity oil, cutting 2.9 per cent on the bean, following completion at 3,589 feet.

Universal Consolidated Oil Co. has leased the nine-acre F. P. Newport property which adjoins General Petroleum Corp.'s Southern Pacific lease in the eastern end of the Long Beach harbor section. General Petroleum No. 2 Southern Pacific which is at present flowing 5,760 bbls. daily is located within 500 feet of the Newport property line. The lease on the Newport property was approved by the referee in bankruptcy in federal court as this corporation is going through bankruptcy. Universal Consolidated has agreed to drill two wells on the lease.

In order to cope with the increasing production of natural gas in the Wilmington field Lomita Gasoline Co. has secured a permit to erect a booster plant at Ninth and Harbor Streets at a cost estimated at $100,000. This company is moving natural gas from the Wilmington field to its gasoline plant in the Long Beach field.

Santa Maria

In the Santa Maria Valley field of Santa Barbara County, Pacific Western Oil Co. completed No. 2 Stamarind in section 27-10-34, flowing 1,945 bbls. of clean 16.5-gravity oil daily from 4,633 feet. Delaine Petroleum Corp. No. 3 S.M.V. in section 27-10-34, was completed flowing 954 bbls. of 16.4-gravity oil daily

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	January 28—		January 21—			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	70,808
Gasoline	74,960	10,709	65,685	9,384	263,604	79,106
Kerosene	.....	.....	59,885	8,555	59,885	.....
Foreign exports:						
Crude oil	406,914	58,131	845,703	120,815	1,535,458	568,285
Fuel oil	.....	.....	.....	.....	275,873	1,305,588
Diesel and gas oil	.....	.....	138,579	19,797	285,644	871,401
Gasoline	151,472	21,639	93,942	13,420	402,572	345,968
Kerosene	.....	.....	13,516	1,931	122,026	292,986
Coastwise-domestic:						
Crude oil	134,448	19,207	320,343	45,763	658,761	584,652
Fuel oil	217,589	31,084	384,858	54,980	1,243,564	820,838
Diesel and gas oil	33,198	4,743	68,024	9,718	154,654	52,772
Gasoline	245,094	36,442	375,757	53,680	1,236,290	950,998
Kerosene	.....	.....	2,170	310	18,077	2,199

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	178,662	25,523	.....	.....	178,662	75,895
Foreign exports:						
Crude oil	90,270	12,896	.....	.....	336,219	244,600
Fuel oil	.....	.....	.....	.....	26,031	127,960
Diesel and gas oil	.....	.....	.....	.....	98,893	221,869
Gasoline	72,351	10,336	.....	.....	138,473	492,157
Kerosene	30,723	4,389	.....	.....	70,669	66,837
Lubricants	.....	.....	.....	.....	.....	25,353
Coastwise-domestic:						
Fuel oil	169,255	24,179	181,216	25,889	619,690	423,602
Diesel and gas oil	45,148	6,450	30,904	4,415	161,080	58,124
Gasoline	110,857	15,837	157,929	22,561	681,125	359,057
Kerosene	19,607	2,801	18,607	2,658	79,165	3,367

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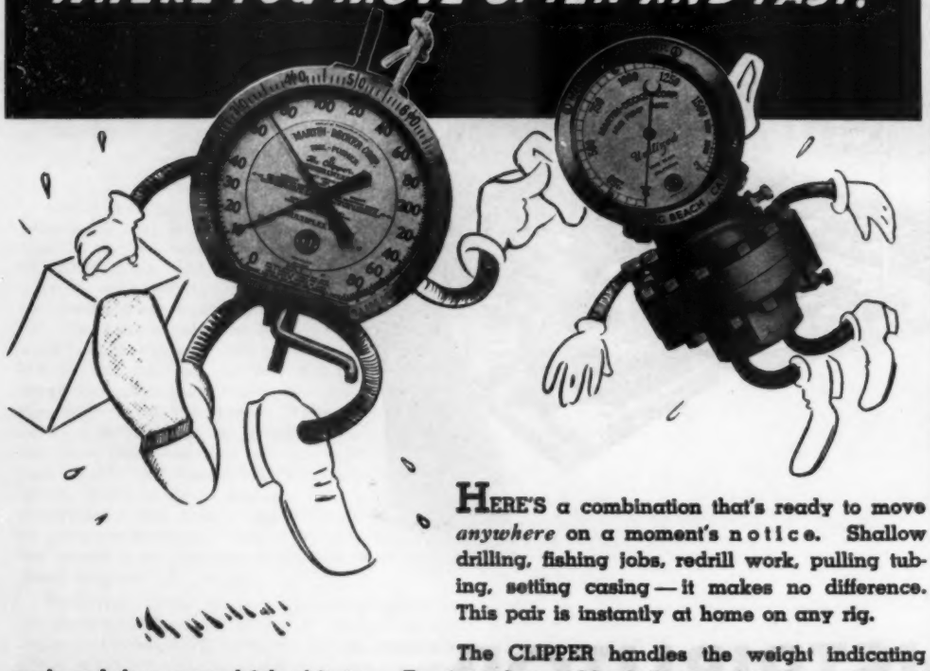

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from 4,456 feet. Top of the Monterey was logged at 4,120 feet and top of the Franciscan basement at 4,450 feet. The Hancock-Bush interests completed No. 2 California Lands in section 27-10-34, pumping 433 bbls. of relatively clean 15.6-gravity oil daily from 4,312 feet. No. 2 Allison of California Lands, Inc., in section 26-10-34, pumped 381 bbls. of exceptionally clean 13.7-gravity oil daily from 5,325 feet, and the crew was transferred to No. 3 on the same lease. Edco Oil Corp. No. 1 S.M. in section 27-10-34, was completed flowing 840 bbls. of clean 16.5-gravity oil from 4,391 feet. Top of the Monterey was logged at 4,100 feet and top of the Franciscan basement at 4,370 feet. During the month of February Union Oil Co.'s pipe line will move 10,000 bbls. of crude oil out of the Santa Maria Valley field per day and allowable production will be prorated on both a potential production and proved acreage basis as was done during January. Drilling operations continue to show a substantial increase from week to week in this field and the large number of undrilled locations indicate that normal development will continue for another several months at least.

El Segundo

Standard Oil Co. completed No. 7 Refinery, on the company's El Segundo refinery property, pumping 518 bbls. of 21.1-gravity oil and 27 bbls. of water daily from 7,330 feet. Wilshire Oil Co. No. 2 Security was completed flowing 330 bbls. of clean 25.1-gravity oil per day on a compressor from 7,205 feet and Wilshire No. 2-1 Elsie was finished pumping 470 bbls. of 24.9-gravity oil daily from 7,250 feet. Lakeside Oil Co. completed its last well in the El Segundo field pumping 220 bbls. of very clean 21.1-gravity oil daily from 7,400 feet.

Canal—Ten Section

Ohio Oil Co. completed its second producer in the Canal field, Kern County, No. 4-E Kern County Land in section 13-30-26. It was brought in flowing 2,114 bbls. of very clean 36.9-gravity oil daily from 8,175 feet, total depth. It is flowing from 79 feet of oil sand.

San Joaquin Basin

Continental Oil Co. is expected to pass the 13,000-foot level in No. 2-A Kern County Land, a wildcat in the Wasco district of Kern County, early this week unless drilling operations are concluded before reaching that point. This well was down 12,944 feet on last report and is the deepest hole ever drilled. No showings of importance have been found and the company does not know whether the Rio Bravo zone has been drilled through, or lies ahead.

In the Kettleman North dome field, Kettleman North Dome Association completed No. 27-6-Q in section 6-22-18, flowing 498 bbls. of 35.4-gravity oil and 1,000,000 feet of natural gas per day from 8,190 feet after the hole had been carried down to 9,065 feet and then plugged back to the completion depth. Kenda is making preparations to conduct a production test on No. 4-18-J within the next few days.

In the North Belridge field, No. 61-27 of Belridge Oil Co. in section 27-27-20, proved a distinct disappointment upon completion at 8,750 feet as it was good for only 120 bbls. of 32.7-gravity oil per day. The output is still cutting 30 per cent and it is possible that an ineffective water shutoff is preventing larger production of crude oil.

In the northern end of the Round Mountain field of Kern County, Marcan Oil Co. has completed No. 3 C.L. in section 12-28-28, pumping 438 bbls. of clean 14.7-gravity oil per day from 2,058 feet. California Star Oil Co. No. 3-80 in the Kern River field was good for 61 bbls. of 13.8-gravity oil cutting 6 per cent daily from 2,755 feet. In the Midway-Sunset field Iroquois Oil Co. No. 2 M.S. in section 7-11-23, has been completed pumping 146 bbls. of 14.1-gravity oil per day from 1,779 feet.

Los Angeles Basin

The Texas Co. finished a good well in the Long Beach field by completing No. 5 Bauman, pumping 149 bbls. of very clean 23.2-gravity oil daily from 4,730 feet. Edgewater encroachment in this field has become a serious problem and the completion of No. 5 Bauman as a clean producer indicates careful engineering work.

In the Yorba Linda area where small shallow production has been developed during the past year Berco Oil Co. completed No. 1 Milhous, pumping 105 bbls.

(Continued on Page 90)

Kansas Developments

By
DAL DALRYMPLE

Rice County Wildcat Opens Pool South of Stumps Sector

Discovery of a new Arbuckle lime area in northwestern Rice County featured activity in Kansas oil fields the past week, a 7-day period that saw some other strikes and extensions although field activity generally was uneventful.

The discovery well, C. L. Price No. 1 Gemeinhardt, NE NE SE section 18-18-10w, had 2,800 feet of oil in the hole from Arbuckle lime topped at 3,297 feet, total depth 3,306 feet. Operators were preparing to cement casing for completion. Nearest production is in the Stumps pool, 2 miles northward. The Orth pool is 3 miles southeast of the discovery.

A new strike in Ellis County was indicated at Colonial Oil Co. and M. J. Trott No. 1 Hadley, SE NE SE section 12-11-18w, wildcat west of the Bemis field Saturation was found in Lansing lime at 3,145 feet, total depth. Operators set 7-inch casing at 3,125 feet and were due to test.

Extension of the Stoltenberg pool, Ellsworth County, 1 mile to the northwest appeared imminent at Colonial Oil Co. No. 1 Hagy, NW NW SW section 16-16-10w, in which oil rose 600 feet in the hole in one hour from Arbuckle lime at 3,329 feet. Operators were running 7-inch casing preparatory to completion.

Activity continues unabated in the Neosho Falls district of Woodson County, where Diller Oil & Gas Corp., H. L. Mourer and other operators have 23 rigs in operation. Thirty-six producing wells have been completed in the district with only two dry holes, with 18 of the producers and one dry hole being on the Neosho Falls townsite. Woodson County has been exempted from proration by the Corporation Commission, leaving operators free to produce all oil that can be produced.

An order exempting the Morrison pool, Clark County, from proration was issued by the commission on application of Olson Oil Co., discoverer of the pool. Two wells in the pool were producing at the rate of 63 bbls. of oil and 200 bbls. of water and 92 bbls. of oil and 250 bbls. of water, respectively.

J. E. Elson, Eldorado operator, was reported assembling a 6,600-acre block in Jefferson County, northeastern Kansas, for a wildcat test.

Wildcat Completions

The pool opener near Lindsborg, northern McPherson County, was completed at Carter Oil Co. No. 1 Hoglund, C W half SW NW section 8-17-3w, for potential of 345 bbls. of oil and an estimated 50 bbls. of water. Gravity of the oil was 36 at 66 degrees. Production was from Viola lime topped at 3,352 feet, total depth 3,569 feet, plugged back to 3,373 feet. Top of Topeka lime was 1,768 feet, Kansas City lime 2,261 feet, Chat 2,920 feet, Simpson sand 3,484 feet. Arbuckle lime 3,542 feet.

A discovery well was completed in Cowley County at Earl Wakefield No. 1 Whitson, SW NE SE section 8-32-4, northwest of the Winfield area. It had Stalnaker sand at 1,925 feet, Layton sand 2,329 feet, Kansas City lime 2,430 feet, Arbuckle lime 3,285 feet, pay 3,290 feet, total depth 3,294 feet, and pumped 100 bbls. of oil, with an estimated 200 bbls. of water in 24 hours.

The third discovery well of the week to be completed in Kansas was P. G. Reynolds and others No. 1 Karlin, NW cor. section 13-12-18w, in the Shutts district, Ellis County. Arbuckle lime was found at 3,674 feet, total depth 3,682 feet, and after acid treatment it pumped 193 bbls. of oil in the first four hours of potential test, 153 bbls. the next four hours and made potential of 917 bbls. Gravity of the oil was 31.9 at 88 degrees.

Kansas Oil Corp. No. 1 Mease, NE SE SE section 27-30-11w, wildcat in northwestern Barber County, had Arbuckle lime at 4,896 feet, total depth 4,910 feet, and was dry and abandoned.

Russell County

Six wells in Russell County were completed. Magnolia Petroleum Co. No. 1 Rogg, SW SW NE section 27-14-13w, found Kansas City lime at 2,885 feet, was bottomed at 2,916 feet, water intruded and it was plugged back to 2,913 feet. It pumped 318 bbls. of oil in four hours after acidizing and made potential of 1,822 bbls. of oil, with 1 per cent water.

Central Petroleum Co. No. 1 Aley A, SW NE NW section 9-14-15w, made potential of 578 bbls. of oil after acidizing. Top of Kansas City lime was 3,042 feet, total depth 3,075 feet.

J. C. Shaffer, Inc., No. 5 Cram, SE NW SE section 11-14-15w, had Kansas City lime at 3,027 feet, total depth 3,070 feet, was acidized and pumped 111 bbls. of oil in four hours, later pumping 267 bbls. in eight hours and making potential of 789 bbls.

Wolf Creek Oil Corp. No. 1 Rouback, SW SW NE section 15-14-15w, found Gorham sand at 3,206 feet, total depth 3,210 feet, swabbed 95 bbls. of oil in 1 hour and 50 minutes without lowering oil below 1,000 feet, and made potential of 2,259 bbls. of 34-gravity oil.

Transwestern Oil Co. and others No. 3 Sadie Boomhower, SE SW SW section 19-15-13w, topped Arbuckle lime at 3,321 feet, pay 3,325-26 feet, total depth, and made potential of 1,206 bbls. of oil.

Cities Service Oil Co. No. 1 Tittle C, NE NE NW section 13-15-14w, pumped 269 bbls. of oil in four hours and made potential of 1,328 bbls. Kansas City lime was found at 3,074 feet, pay 3,091 feet, total depth 3,125 feet.

New work in Russell County: Helmerich & Payne No. 1 Hall, SW SW NW section 22-14-14w, cellar; Coralena Oil Co. No. 2 L. Sellens, C N half N half NW section 17-15-13w, drilling around 3,000 feet; Gulf Oil Corp. No. 10 Michaels, SW cor. section 32-15-15w, rig.

Barton County

Phillips Petroleum Co. No. 5 Kraft, SW SW NE section 10-17-11w, Kraft pool, Barton County, found Arbuckle lime at 3,283 feet, was bottomed at 3,314 feet, and made potential of 1,370 bbls. of oil.

Sinclair Prairie Oil Co. No. 1 Grossardt, NE NE SW section 10-17-11w, an old well, was deepened from 3,319 feet to 3,329 feet, made potential of 691 bbls. of oil and was recompleted.

Paul Martin and associates No. 1 Kultgen, SE SE NE section 17-16-12w, pumped 208 bbls. of oil in four hours and made potential of 890 bbls. at 3,342 feet, total depth. Gorham sand was found at 3,339 feet, with top of Kansas City lime at 3,073 feet.

I. W. Murfin and others No. 1 Lanterman C, SW SW SE section 15-19-11w, had Kansas City lime at 3,049 feet, pay 3,110-15 feet, total depth, flowed 131 bbls. of oil in four hours and made potential of 631 bbls., with 4,000,000 feet of gas.

The following new activity in Barton County was reported: Stanolind Oil & Gas Co. No. 1 Schartz B, SE cor. section 34-19-11w, rigging up rotary; Lebow No. 2 Steckel, SW NW SW section 1-20-11w, cellar; Gulf Oil Corp. No. 2 Nicholas, SW SW NW section 12-20-11w, drilling at 2,117 feet.

Ellis County

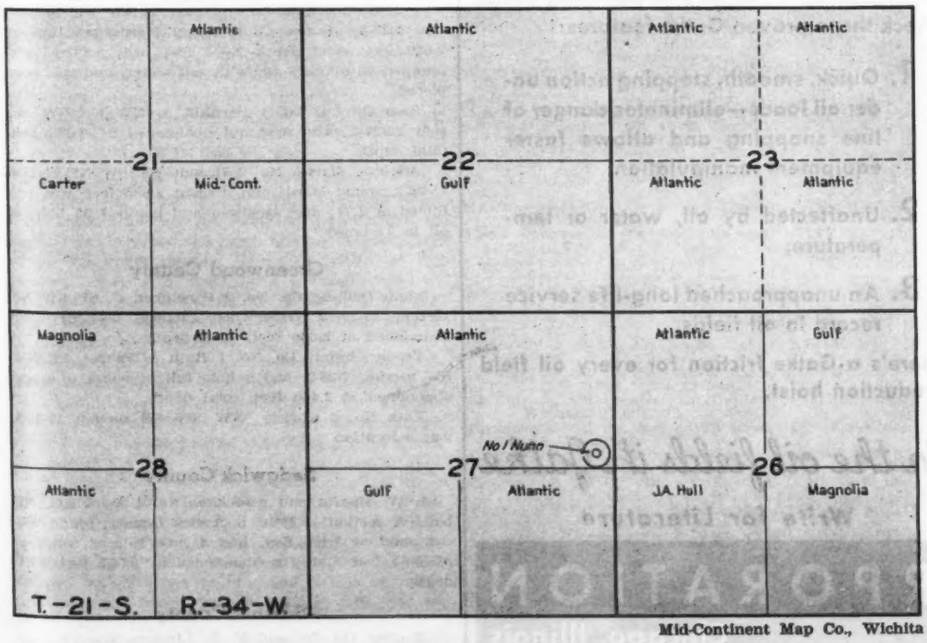
Deep Rock Oil Corp. No. 27 Baumer, SE SE NE section 27-11-17w, Bemis field, Ellis County, found Arbuckle lime at 3,403 feet, total depth 3,416 feet, was acidized and made potential of 1,681 bbls. of oil.

Carter Oil Co. No. 1 John Staab, SW SE NE section 11-12-18w, was bottomed at 3,719 feet, plugged back to 3,495 feet and acidized but was temporarily abandoned.

Rice County

Gulf Oil Corp. No. 2 Hirsch, SE NW NE section 18-20-10w, Silica district, Rice County, had Arbuckle lime at 3,308 feet, total depth 3,328 feet, was acidized and made potential of 768 bbls. of oil.

Indian Territory Illuminating Oil Co. No. 1 Lam-



Mid-Continent Map Co., Wichita

Atlantic Refining Co., discoverer of the Shallow Water pool in Scott County, is starting a wildcat in section 27-21-34w, Finney County, southwest of Shallow Water

berson, SW SW SE section 32-20-7w, Wherry district, had Conglomerate at 3,321 feet, total depth 3,354 feet, pumped 157 bbls. of oil in 20 hours and was completed as a minimum well for 15 bbls.

New activity in Rice County: Continental Oil Co. and others No. 2 Johnson, SE SE SW section 12-18-8w, location; same operators' No. 4 Wood, SW SW SE section 12-18-8w, rig; Schneider and others No. 1 Sterling College, SE SW SE section 28-20-8w, rig.

McPherson County

E. B. Shawver and Shell Petroleum Corp. No. 5 Lively, SE SW NW section 21-19-1w, Ritz-Canton area, McPherson County, topped Wilcox sand at 3,400 feet, total depth 3,431 feet, and made potential of 252 bbls. of oil.

Same operators' No. 3 Lively, SE NW NW section 21-19-1w, an old well, was deepened from 2,958 feet to Wilcox sand at 3,402 feet, total depth 3,448 feet, perforated casing and made potential of 90 bbls. of oil, recompleted.

Ohio Oil Co. No. 1 Decker, CEL E half SE section 20-21-1w, Graber area, was completed as a salt water disposal well at 2,225 feet, total depth.

Ellsworth County

Stanolind Oil & Gas Co. No. 1 Stumps, SW SW NE section 30-17-10w, Bloomer area, Ellsworth County, found Arbuckle lime at 3,273 feet, total depth 3,287 feet, was shot and acidized and made potential of 1,539 bbls. of oil, with 273 bbls. of water.

Transwestern Oil Co. and others No. 1 Disque, SE cor. section 32-17-10w, Stumps area, had Arbuckle lime at 3,238 feet, total depth 3,265 feet, made potential of 291 bbls. of oil naturally, was acidized and made new potential of 819 bbls. of oil.

Cities Service Oil Co. No. 10 Rolf, SW NE NE section 14-17-9w, an old well, was deepened from 3,188 feet to 4,069 feet, and completed as a water disposal well.

Reno County

Joseph Davis and others No. 1 Welch, C SW SE section 4-24-4w, Burrton field, Reno County, topped Conglomerate at 3,280 feet, had pay at 3,366-72 feet, total depth, was acidized, pumped 201 bbls. of oil in four hours and made potential of 1,146 bbls. of oil, with 8 per cent water.

Estimated Daily Production

Estimated daily production of Kansas for the week ending February 5, and for the preceding week, was as follows:

	Barrels	
	Feb. 5	Jan. 29
Oxford City	1,400	1,500
Burrton	12,225	12,100
Ritz-Canton	5,200	5,275
Graber	2,800	3,375
Hollow-Nikkel	2,450	2,500
Lerado	1,675	1,575
Voshell	2,250	2,275
Wellington	2,150	2,075
Ellsworth County:		
Lorraine	2,450	2,875
Other pools	720	1,230
Rice-Barton counties:		
Bloomer	4,000	4,150
Chase	6,650	6,700
Geneseo	1,975	2,625
Raymond	950	1,175
Silica—Silica West	13,600	17,025
Silica—South	2,750	2,725
Keesling	1,100	1,075
Hauschild	1,450	1,075
Miscellaneous Rice	8,550	6,590
Miscellaneous Barton	5,030	8,350
Russell County:		
Fairport	1,880	1,625
Gorham	1,860	1,805
Russell	2,150	2,060
Sullivan	7,570	6,960
North Trapp	10,520	10,800
Miscellaneous Russell	8,585	9,005
Sedgwick County:		
Valley Center	1,110	1,050
Miscellaneous	2,810	2,790
Ellis County:		
Bemis	6,725	6,775
Miscellaneous	2,700	2,930
Kingman County	630	640
Stafford County	3,490	3,405
Greenwood County	9,875	9,800
Butler County	16,000	16,100
Other fields	24,670	25,060
Total Kansas	179,950	187,075

Stafford County

Stanolind Oil & Gas Co. No. 1 Mettscher, NE NE NW section 13-22-13w, Stafford County, found Arbuckle lime at 3,671 feet, total depth 3,684 feet, swabbed 67 bbls. of oil in two hours, was acidized, pumped 179 bbls. of oil in four hours and made potential of 1,071 bbls. of oil.

New work in Stafford County: Torry & Feaster and others No. 1 Mueller, SE cor. section 29-21-12w, rigging up rotary; Carlock and others No. 1 Gates, SE SW NE section 34-22-11w, location; Atlantic Refining Co. No. 1 Hitz, SE SE NE section 12-22-13w, rig; C. Knight and others No. 1 McNickle, SE SE NE section 2-24-11w, cellar and pits; Atlantic Refining Co. and Phillips Petroleum Co. No. 3 McNaughton A, C E half E half NE section 27-24-13w, location; National Refining Co. No. 1 Bonham, SW cor. section 28-25-12w, cellar.

Butler County

Cox & McGinnis No. 3 Houston, NW NE SE section 1-25-3e, Butler County, had Mississippi lime at 2,650 feet, total depth 2,667 feet, was acidized and pumped 90 bbls. of oil, with salt water, and was completed.

Saco Oil Co. No. 1 Barnhill A, NW NE SW section 23-27-7, was dry and abandoned at 2,083 feet, total depth.

Adair & Martin No. 2 Brandt, SE SW NE section 15-28-7, found Mississippi lime at 2,685 feet, was bottomed at 2,715 feet, acidized and pumped 35 bbls. of oil in 24 hours.

Greenwood County

Shull Drilling Co. No. 3 Hinchman C, SE SW NE section 17-24-13, Greenwood County, was dry and abandoned at 2,636 feet, total depth.

Veeder Supply Co. No. 1 Roth & Faurot, SE NW SW section 7-25-9, had a hole full of water and was abandoned at 2,460 feet, total depth.

Katz No. 3 Christy, NW SW SE section 12-26-9, was a location.

Sedgwick County

I. W. Murfin and associates No. 1 Wickham, NE NE SW section 18-28-1e, Sedgwick County, found Wilcox sand at 3,495 feet, had a hole full of water at 3,555-65 feet and was abandoned at 3,567 feet, total depth.

Sumner County

Bradley Oil Co. and E. T. Lindsay No. 1-B Duncan, NE SE SW section 15-35-2e, Sumner County, had

(Continued on Page 90)

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Rocky Mountain Area

By
T. R. INGRAM

Eastern Colorado Wildcat of Gulf Is Showing Favorably

DENVER, Colo., Feb. 7.—Plans announced by the state treasurer of Wyoming to promote the construction of a natural gas pipe line into northern Colorado and Denver aroused considerable interest in the Colorado capital. The Texas-California companies' wildcat on Wilson Creek found water in the Sundance and will plug back to the Morrison.

Wyoming had no completions and no new operations. Operators committee gives official names to Minnelusa sand wells in Lance Creek.

Approximately half the gasoline sold in Montana last year was refined in the state according to preliminary reports. Exports of Montana crude to Canada reached a new low level in December. One well was completed for 20 bbls. in Kevin-Sunburst and two new operations were started in that field.

Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW section 13-3s-49w, Mount Pearl district, Cheyenne County, Colorado, had a good showing of oil in lime at 4,808-13 feet. The horizon was drilled 2 feet and cored 3 feet and the core showed considerable live oil, with gas. A tester was run but could not be seated and was pulled. The bit was then run to remove any obstruction, and it is planned to make another attempt to test. Reports are to the effect that the showing is very good.

This is the only test being drilled by a major company in eastern Colorado. Major companies have several millions of acres leased between the front mountain range and the Kansas line. The block upon which the Gulf well is located has been looked upon for several years as the most promising in that area. It is near the center of the big lease play but some distance from the seven wells put down in the past three years, being 45 miles northeast of the Gulf's No. 1 Smith in Lincoln County and 20 miles north of the Gulf's Galatea test in Kiowa County. The Indian Territory Illuminating Oil Co. drilled three wells, two of which were 75 miles to the north and northeast.

The Gulf's drilling well topped the Pennsylvania at about 4,470 feet, and oil began showing through the mud at 4,808-10 feet, and then a 3-foot core was taken, of which 2½ feet showing saturation was recovered. While the results can not yet be stated definitely, the fact that a good showing has been obtained has caused tremendous excitement in Denver and is looked upon as putting an entirely new face on the possibilities in that district.

NEW MEXICO

The Vacuum area of Lea County continues to hold the spotlight in New Mexico, with one well near completion and another completed on the west side to close the gap between the north and south producing sectors. Elsewhere in New Mexico, a feature of the week was starting of work at a wildcat in Chaves County at Grastorf & Caudill No. 1 Smith, C NE NE section 1-4s-29, where standard rig had been erected and operators were ready to spud.

The Vacuum well near completion is Magnolia Petroleum Co. No. 3 State Bridges, C SW SE section 23-17-34, 1 mile south of the company's No. 2 State Bridges. It flowed 295 bbls. of oil in 11 hours through tubing from pay topped at 4,495 feet, total depth 4,551 feet.

The completion was Phillips Petroleum Co. No. 1 Hale, C NE SE section 35-17-34, 1 mile north of the Texas Co.'s two producers and 1¾ miles south and one-fourth mile east of Magnolia's No. 3 State Bridges. The No. 1 Hale topped lime pay at 4,395 feet, was bottomed at 4,500 feet in lime and flowed 287 bbls. of oil in eight hours through tubing, with 750,000 feet of gas.

Nine other wells in Lea County were completed. Continental Oil Co. No. 4-B-10 Sanderson, NE SE SE section 10-20-36, had pay at 3,818 feet, total depth 3,890 feet, was acidized and flowed 150 bbls. of oil in three hours through choke, with 2,250,000 feet of gas.

Same company's No. 7-A-14 Sanderson, NE SW NE section 14-20-36, flowed 36 bbls. of 34-gravity oil through choke in two hours from pay topped at 3,828 feet, total depth 3,867 feet.

Culbertson & Irwin No. 4-A Humphrey, NE SE NW section 3-25-37, had pay at 3,340 feet, total depth 3,463 feet, was shot and flowed 154 bbls. of oil daily through tubing, with 1,000,000 feet of gas.

Danglade & Clower No. 1 Clifton, C SW SW section 4-22-37, flowed 111 bbls. of oil daily through tubing from pay found at 3,681 feet, total depth 3,710 feet.

Gulf Oil Corp. No. 2-E Janda, NW NE NE section 21-23-36, topped pay at 3,650 feet, total depth 3,690 feet, and had natural flow of 206½ bbls. of oil through tubing in three hours, with 1,195,592 feet of gas.

Phillips Petroleum Co. No. 1 New, C E half NE NE section 26-20-36, flowed 233 bbls. of oil through tubing in three hours after acidizing pay topped at 3,730 feet, total depth 3,850 feet. Gas gauged 1,520,000 feet.

Shell Petroleum Corp. No. 1 Grizzell, C NW SE section 8-22-37, topped pay at 3,660 feet, total depth 3,718 feet, was acidized and flowed 201 bbls. of oil in six hours through tubing, accompanied by 1,500,000 feet of gas.

Shell Petroleum Corp. and Devonian Oil Co. No. 3 Christmas, C SW NE section 21-22-36, was dry and abandoned after plugging back to 3,840 feet from 3,855 feet, total depth.

Stanolind Oil & Gas Co. No. 1-A Hill, C NW SE section 6-21-37, had pay at 3,640 feet, total depth 3,787 feet, and flowed 48 bbls. of oil through choke in six hours.

A Chaves County failure was recorded at Mathewson and others No. 1 McDonald, C NE NW section 19-15-27, which had a hole full of sulfur water at 610 feet, water increased and it was plugged and abandoned at 1,407 feet, total depth.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.
Amerada Pet. Corp. No. 2 Corrigan, C S½ SE NE sec. 4-22-37. T.D. 3,822 ft.; P.B. 3,771 ft.; to shoot.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,585 ft.; set 8-in. 2,573 ft.
Anderson-Prichard Oil Corp. No. 1 Carlson, SW cor. sec. 23-25-37. Prep. to spud.
Anderson-Prichard Oil Corp. No. 2-D Langlie, C NW NE sec. 8-25-37. Drlg. 570 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,325 ft.
Barnsdall Oil Co. No. 2 J. Whitten, SE NE SE sec. 33-23-36. Drlg. 2,635 ft.
Bradley Oil Co. No. 1 Downes, SE NE SE sec. 5-22-37. Loc.
Cities Service Oil Co. No. 2-A Clossen, NE sec. 18-22-36. Drlg. 3,790 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 1-A-22 Elliott, C SW SW sec. 22-22-37. O.W.D.D.; T.D. 3,552 ft.; C.O.
Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,778 ft.; C.O.
Continental Oil Co. No. 1-B-9 Elliott, NW sec. 9-22-37. Drlg. 3,628 ft.
Continental Oil Co. No. 1-A-20 Jack, C NE SE sec. 20-24-37. Drlg. 2,675 ft.
Continental Oil Co. No. 3-B-31 Lockhart, SE sec. 31-21-36. T.D. 3,924 ft.; acd.; tstg.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,275 ft.; rmg.
Continental Oil Co. No. 2-B-23 Reed, NE SE NE sec. 23-20-36. Cellar.
Continental Oil Co. No. 1-B-14 Sanderson, NE SW SE sec. 14-20-36. Drlg.
Continental Oil Co. No. 3-E-17 State, C NW NW sec. 17-22-36. T.D. 1,510 ft.; set 9⅝-in. csg. 1,505 ft.
Continental Oil Co. No. 1-F-1 State, C SW SW sec. 1-21-36. Drlg. 1,155 ft.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 5-A Humphrey, NE NW SE sec. 3-25-37. Drlg. 2,300 ft.
Culbertson & Irwin No. 7-A Humphrey, NE SW SE sec. 3-25-37. Loc.
Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. T.D. 2,945 ft.; fsg.
Dalport Oil Corp. No. 1 Leonard, C SE NW sec. 29-26-38. Wildcat; Drlg. 3,620 ft.
Danglade & Clower No. 1 Currie, NE NE SW sec. 6-21-37. Loc.
Danglade & Clower No. 1 Glier, C SW NE sec. 33-22-37. Drlg. 1,455 ft.
L. E. Elliott No. 1 Elliott, NE NE SE sec. 26-20-36. Drlg. 3,587 ft.
Empire O. & R. Co. No. 2-B State, C SE SW sec. 2-21-37. Drlg. 3,875 ft.
A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. M.I.M.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Geo. F. Getty No. 1 Riggs, NW sec. 1-26-37. Wildcat; drlg. 2,005 ft.
Geo. F. Getty No. 1-F State, C NE NE sec. 36-17-34. Drlg. 3,112 ft.
Gulf Oil Corp. No. 6-F Bell, C NW SW sec. 36-20-36. Drlg. 1,730 ft.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 3 Day, SE SE SW sec. 6-22-36. T.D. 1,610 ft.; set 8⅝-in. csg. 1,600 ft.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37 Drlg. 3,420 ft.
Gulf Oil Corp. No. 2 Elliott, C NE SE sec. 15-25-37. Drlg. 3,253 ft.
Gulf Oil Corp. No. 1 Greer, SW sec. 21-22-36. T.D. 3,825 ft.
Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. R.U.R.
Gulf Oil Corp. No. 1-D Mattern, SW sec. 6-22-37. T.D. 3,795 ft.; S.D.
Gulf Oil Corp. No. 3 McCormack, C SE SE sec. 32-21-37. Drlg.
Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well; T.D. 3,666 ft.; P. 3 B.O.P.D.
Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. T.D. 39 ft.; set surf. csg.
Gulf Oil Corp. No. 2 Stebbins, C SW NW sec. 5-22-37. T.D. 3,770 ft.; to swab.
Gulf Oil Corp. No. 1 Woolworth, C NE SE sec. 30-24-37. T.D. 3,685 ft.; to deepen.
Humble O. & R. Co. No. 2 Greenwood, C NE SW sec. 9-22-37. Loc.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. Prep. to spud.
Harry Leonard No. 1 Ginsberg, NW sec. 29-25-38. Wildcat; drlg. 1,425 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 1-H State, C NW NW sec. 31-17-35. Drlg. 3,299 ft.
Magnolia Pet. Co. No. 1-I State, C NW SW sec. 36-17-34. Drlg. 2,800 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flw. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NW SW sec. 23-17-34. T.D. 4,551 ft.; rng. tbg.
J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-23. Wildcat; T.D. 3,516 ft.; to set whipstock.
McDowell & Weiner No. 1 Elliott, SE cor. sec. 19-21-37. T.D. 3,821 ft.; C.O.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.
C. T. McLaughlin No. 1 Imperial Royalties, NW SE NW sec. 9-24-37. T.D. 3,436 ft.; waiting on spudder.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,695 ft.
Ohio Oil Co. No. 2 Grizzell, C NW SE sec. 5-22-37. T.D. 600 ft.; prep. to drill in.
Ohio Oil Co. No. 1 Hardy, NE NE SE sec. 20-21-37. T.D. 3,639 ft.; fsg.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 4 State-Hansen, C W½ SE NE sec. 16-20-37. Drlg. 2,701 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Ohio Oil Co. No. 1 State-Warn, C SE NW sec. 21-17-35. T.D. 3,392 ft.; S.D. for repairs.
Lem Peters No. 1 Graham, sec. 27-22-37. T.D. 3,367 ft.; drlg. plug.
Parker Drlg. Co. No. 1 Irwin, C W½ SW SW sec. 35-24-37. Drlg. 2,205 ft.
Phillips Pet. Co. No. 1 Helen, C E½ SE NE sec. 33-24-37. Loc.
Phillips Pet. Co. No. 1 Commissioner, C SW SE sec. 30-17-35. Loc.
Phillips Pet. Co. No. 1 Santa Fe, C SW NW sec. 31-17-35. Loc.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Plains Prod. Co. No. 2 Moseley, SW NE SE sec. 34-24-37. Drlg. 3,325 ft.
Repollo Oil Co. No. 1 Powhatan Carter, SW SW NE sec. 9-24-37. T.D. 3,705 ft.; P.B. 3,600 ft.; flw. 29 B.O.P.D.; C.O.
Repollo Oil Co. No. 3 Christmas, NW NW NE sec. 28-22-37. T.D. 3,726 ft.; P.B. 3,664 ft.; C.O.
Repollo Oil Co. No. 4 Roach, NW NW SW sec. 21-20-37. T.D. 3,875 ft.; P.B. 2,860 ft.; shot; R.U.S.T.; to C.O.
Repello Oil Co. No. 4-D Stuart, SW sec. 10-25-37. Drlg. 2,295 ft.
Rowan Drlg. Co. No. 2-A Elliott, C NE SW sec. 27-22-37. Drlg.
Samedan Oil Co. No. 5 Hughes, C NE SW sec. 10-23-37. T.D. 3,358 ft.; set 7-in. csg.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 2 Hill, C NW NE sec. 6-21-37. Loc.

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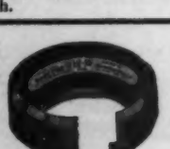

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Skelly Oil Co. No. 5 G. W. Sims, C SE NW sec. 10-23-37. Drlg. 3,587 ft.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 1-K State, NE NE NW sec. 32-21-37. Loc.
Shell Pet. Corp. No. 1-A State, C NW SE sec. 16-23-36. T.D. 1,402 ft.; to run csg.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Sindorf et al No. 1 Glier, NE cor. sec. 33-22-37. R.U. machine.
Southern Pet. Exploitation Co. No. 2 Downes, C SW SW sec. 32-21-37. Cellar and pits.
Stanolind O. & G. Co. No. 2-A Hill, C NE SE sec. 6-21-37. Loc.
Stanolind O. & G. Co. No. 2-C Hill, C SW NW sec. 5-21-37. Bldg. drk.
Stanolind O. & G. Co. No. 3-C Hill, C NW NW sec. 5-21-37. Loc.
Stanolind O. & G. Co. No. 4-B Myers, C SW NW sec. 21-24-37. T.D. 312 ft.; rng. csg.
W. H. Street No. 3 Woods, C NW NE sec. 22-22-37. Drlg. 3,566 ft.
Sun Oil Co. No. 2 Lanehart, C NE SE sec. 20-25-37. T.D. 3,620 ft.; P.B. 3,325 ft.; C.O. and tstg.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. T.D. 4,020 ft.; to set csg.
Texas Co. No. 3 Fristoe, NW SE NE sec. 3-25-37. Drlg. 410 ft.
Texas Co. No. 14 Lieu Lands, SW SW NW sec. 19-20-37. T.D. 145 ft.; set 13-in. 135 ft.
Texas Pacific C. & O. Co. No. 8-A State, Acct. 2, C SE SE sec. 7-22-36. T.D. 1,475 ft.; rng. csg.
Texas Pacific C. & O. Co. No. 9-A State, Acct. 2, NW SW NE sec. 7-22-36. Cellar and pits.
Tide Water Associated Oil Co. No. 2 Day, C E½ NW NW sec. 6-22-36. T.D. 280 ft.; set 9⅝-in. 280 ft.
Two States Oil Co. No. 2 Downes, C NE NE sec. 6-22-37. Drlg.
Western Gas Co. No. 1 Cowden, SE cor. sec. 30-23-37. T.D. 3,625 ft.; C.O. after shot.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. T.D. 2,117 ft.; fsg.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. T.D. 938 ft.; S.D.O.
Ed Bryant No. 1 Stebbins, C NE SW sec. 19-20-29. Drlg. 1,014 ft.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. T.D. 3,265 ft.; C.O.
Emperor Oil Co. No. 4 Puckett, C NE NE sec. 24-17-31. Cellar and pits.
Emperor Oil Co. No. 5 Puckett, C SW NE sec. 24-17-31. Cellar and pits.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
Franklin Pet. Corp. No. 1 McIntyre, NE NW SW sec. 20-17-30. T.D. 3,270 ft.; acd.; F. 125 B.O.P.D.; tstg.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 1,170 ft.; S.D.O.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. T.D. 1,197 ft.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 15-17-30. Drlg. 2,000 ft.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. T.D. 3,505 ft.; tstg.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Geo. F. Getty, Inc., No. 1-E State, NE SW SW sec. 16-17-31. T.D. 3,567 ft.; acd.; tstg.
Grayburg Oil Co. No. 10 Burch, SE NE NE sec. 19-17-30. T.D. 3,242 ft.; C.O. after shot.
Grayburg Oil Co. No. 11 Burch, NE NE SE sec. 19-17-30. M.I.M.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 2,800 ft.; set 7-in. 2,794 ft.
M. A. Grisham No. 1 Chaytor, NE sec. 10-24-26. T.D. 1,967 ft.; S.D.O.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 1,036 ft.; fsg.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. Drlg. 870 ft.
Woodworth Hawkins No. 1 Mack, C SW SW sec. 20-24-27. Drlg. 2,195 ft.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Keohane et al No. 1 Shannon, SE cor. sec. 27-16-31. Drlg. 240 ft.
Nash & Windfohr No. 8-A Jackson, sec. 13-17-30. Drlg. 3,144 ft.
Nash-Windfohr & Brown No. 2-B Stevens, NW sec. 13-17-30. T.D. 2,995 ft.; set 7-in. 2,950 ft.
Pecos Valley Gas Co. No. 1 Sappenfield, C SE SE sec. 4-16-28. Loc.
Repollo Oil Co. No. 3-D McIntyre, SE cor. sec. 17-17-30. Drlg. 3,140 ft.
Repollo Oil Co. No. 4-D McIntyre, NW NE NE sec. 21-17-30. Loc.
Repollo Oil Co. No. 1-A Parke, NW NE NE sec. 22-17-30. T.D. 3,450 ft.; acd.
Repollo Oil Co. No. 1-B Parke, SW cor. sec. 15-17-30. Loc.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. T.D. 4,003 ft.; U.R. swabs; est. 75 B.O.P.D.
Texas Co. No. 1 Welch, sec. 30-20-31. Drlg. 2,120 ft.
W. K. Royalty No. 2 State, C NE NW sec. 16-17-31. R.U. mch.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. Drlg. 3,125 ft.
Noel Wills et al No. 1-A State, C S½ SW SE sec. 17-20-30. Drlg. 433 ft.
Martin Yates, Jr., No. 1 Conlon, SW NW NW sec. 7-24-27. T.D. 1,465 ft.; S.D. for repairs.

Chaves County

English & Hamon No. 11 Billingslea, SE sec. 9-15-29. T.D. 3,680 ft.; P.B. 3,456 ft.; C.O.
E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 1,084 ft.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; ready to spud.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. Mch. on ground.

Curry County

Bond & Harrison No. 1 Hart ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W. prep. to deepen from 5,850 ft.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

George Mulvey No. 1 State, SW cor. sec. 11-25-8. T.D. 263 ft.; S.D.
Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. T.D. 1,300 ft.; S.D. for csg.
Fred Turner, Jr., No. 1 H. V. Everett, C SE SE sec. 28-22-13. Spd. and S.D.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. T.D. 455 ft.; S.D.O.

COLORADO

Boulder County

J. B. Furstenberg No. 1 Foote, NE NW SE sec. 20-1n-70w. Drlg. 3,990 ft.

Cheyenne County

Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW sec. 13-13s-49w. Drlg. 4,656 ft. in limestone.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. Drlg. below top Timpas at 3,330 ft.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. Res. at 2,860 ft.; drlg. at 2,885 ft.

Mesa County

Midwest Drlg. & Dev. Co. No. 1 Callahan, NE NW SE sec. 30-8s-97w. S.D. 3,337 ft. until spring acct. bad roads.
Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Cmtd. 13⅜-in. at 630 ft. with 480 sacks and S.D. for winter.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,675 ft.

Rio Blanco County

The Texas Co. No. 1 Unit, on the Wilson Creek dome, joint with the California Co., which was a discovery in the Morrison sand a month ago, proved to be a disappointment in the Sundance. Total depth was 6,918 feet. Cores from the Sundance at 6,824-98 feet showed some saturation, but attempts to make a drill stem test were unsuccessful, and the 7-inch was cemented at 6,817 feet after filling back. Cement was then drilled out and the walls in the upper part of the Sundance were scraped. A tester was then run and filled up with water. The hole is now being plugged back to test the Morrison. Location of this well is more than a mile to the southeast of two wells formerly drilled on the structure, which did not go to the Morrison or Sundance, and it is considered possible the present test is some distance down structure.

Texas Co. and California Co. No. 1 Unit, SW SE NW sec. 35-3n-94w. T.D. 6,918 ft.; cmtd. 7-in. at 6,817 ft.; wtr. in Sundance; will P.B. to Morrison.

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WYOMING

Albany County

Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. T.D. 2,546 ft.; fsg. D.P.

Carbon County

Italo Pet. Co. No. 1 Tunney-Bragg, NE SE NW sec. 11-26n-81w. T.D. 820 ft.; P.B. to 770 ft. to str.; 12½-in. at 503 ft.

Sinclair-Wyoming Oil Co. No. 12-B Wertz, SE NW NW sec. 7-26n-89w. Drlg. 3,798 ft.; 9⅝-in. at 3,413 ft.

Ohio Oil Co.-California Co. No. 4-A Kyle, 661 ft. from N line and 648 ft. from E line, sec. 26-21n-79w. Drlg. 3,916 ft.

Ohio Oil Co.-California Co. No. 6 Union Pacific-Johnson, C SW SE sec. 23-21n-79w. Drlg. 4,916 ft.

Ohio Oil Co. No. 14 H. & C., SE NW SW sec. 35-20n-78w. Cmtd. 10¾-in. at 108 ft.; 40 sacks; W.O.C.

Converse County

New Era Fuel Corp. No. 1 Layne, SE NW NE sec. 27-32n-69w. Drlg. 700 ft.

New Era Fuel Corp. No. 1 Gaspar, NW NW SW sec. 25-32n-69w. Drlg. 700 ft.

D. O. Gray No. 1 Wm. Lane, SW SE SE sec. 22-32n-69w. Cmtd. 8¼-in. at 480 ft.; drlg. plug.

Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. Drlg. 760 ft.

Fremont County

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33n-92w. T.D. 4,006 ft.; rmg. to run csg. to bttm.

Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n 96w. T.D. 7,468 ft.; rmg. 7,440 ft. to run 10-in. to bttm.; base Frontier 7,360 ft.

Natrona County

General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Drlg. below 6,000 ft.

Stanolind O. & G. Co. No. 8 T.P.-Wyo.-Asso.-35, C NW NW sec. 35-40n-79w. T.D. 3,997 ft.; prep. to make D.S. test.

Niobrara County

The committee in charge of the unit operations in the Lance Creek field has officially named the several sands heretofore known as the Upper, Middle and Lower Minnelusa as follows:

Converse sand (Upper Minnelusa), after Ohio Oil Co. No. 5 Converse Sheep, SE SW section 32-36n-65w, discovery at 4,452 feet for 850 bbls. daily; Leo sand (Middle Minnelusa), after Ohio Oil Co. No. 5 Leo-O.P.C.-16, NW NW SW section 35-36n-65w, which had sand at 5,516-37 feet; the Bell sand (basal Minnelusa), after Continental Oil Co. No. 10 Tom Bell, C SW NW section 34-36n-65w, which had the sand at 5,800-80 feet.

Continental Oil Co. No. 3-A Diehlman, SE SE SW sec. 5-35n-65w. T.D. 396 ft.; rng. csg.

Argo Oil Co. No. 6 Ford, NW SW NW sec. 33-36n-65w. Drlg. 2,509 ft.

C. L. Price No. 1 Lamb, NE NW NW sec. 7-35n-65w. Drlg. below 4,017 ft.

Ohio Oil Co. No. 8 Converse Sheep, NE SE SW sec. 32-36n-65w. Drlg. 4,721 ft. in Converse sd.; D.S. test at 4,438-76 ft.; no results.

Continental Oil Co. No. 3 Apex-1, SE SE NE sec. 34-36n-65w. T.D. 5,480 ft.; cmtd. back to 3,217 ft.; drlg. by at 3,690 ft.

Park County

Ohio Oil Co. No. 4 Mack-O.P.C.-4, SE SW SE sec. 30-58n-99w. Drlg. 2,837 ft.

Sweetwater County

Rocky Mountain Drlg. Co. No. 1 Lee, NE NW SE sec. 10-19n-104w. Drlg. 2,831 ft.

Mountain Fuel Supply Co. No. 1 Agnes Fay, 330 ft. from E line and 1,980 ft. from S line, sec. 18-18-103w. T.D. 2,506 ft.; P.B. and cmtd. 1,811 ft. of 10-in. with 150 sacks.

Rocky Mountain Drlg. Co. No. 1 Osborne, SE SE SE sec. 12-18n-104w. Cmtd. 8⅝-in. at 2,480 ft.; unloading to test.

Mountain Fuel Supply Co. No. 1 Hoyt, SW SW SW sec. 32-19n-103w. Drlg. 2,962 ft.

Mountain Fuel Supply Co. No. 1 Clark, NW SE SW sec. 12-19n-104w. S.D. 300 ft.

Sinclair-Wyoming Oil Co. No. 77, SE NE NE sec. 10-26n-90w. T.D. 4,049 ft.; 2 shots, 20 qts. each; C.O.

Weston County

John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. Drlg. 1,950 ft.

MONTANA

Big Horn County

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. Drlg. 340 ft.

E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

Carbon County

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-10e. Drlg. 1,640 ft.

Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. S.D. 3,000 ft.; 8⅝-in. at 2,960 ft.

Glacier County

A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.

Jack Marshall No. 2 All.-119, SE SE NW sec. 1-32n-6w. Drlg. 2,836 ft.

Toole County

One completion and two new operations were reported in the Kevin-Sunburst field. The Big West Oil Co. No. 5 Gunderson, SW NE NW section 19-35n-2w, on the west side, made 20 bbls. per day naturally from the contact at 1,620-41 feet. It will not be acidized at present.

Big West Oil Co. No. 6 Gunderson, NE NW NW sec. 19-35n-2w. Drlg. 200 ft. (first report).

B. A. S. Aronow No. 1 Govt., SE SE SW sec. 18-35n-2w. Drlg. 480 ft. (first report).

West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. Drlg. 1,100 ft.

Superior Pet. Co. No. 7 Govt., NE NW NW sec. 12-35n-3w. T.D. 1,450 ft.; drlg. up bailer.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Top Dak. 1,800 ft.; rng. csg.

Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Drlg. 4,173 ft.

Lauriel Oil Co. No. 1, C NW SW sec. 7-2s-24e. S.D. 200 ft.

UTAH

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.

Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 2,620 ft. in salt.

Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. T.D. 857 ft.; U.R. to lower 12½-in. to 265 ft.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 12-154n-96. S.D. 6,747 ft. for winter.

Oklahoma Fields

(Continued from Page 75)

25-18-9, found Wilcox sand at 3,026 feet, was bottomed at 3,056 feet, and flowed 300 bbls. of 41.7-gravity oil daily.

Big Four Petroleum Co. No. 1 Young, SE NE NW section 24-19-7, topped Red Fork sand at 2,620 feet, total depth 2,656 feet, and flowed 55 bbls. of 38-gravity oil daily, with 1,000,000 feet of gas.

Johnson Oil Refining Co. No. 8 Evans, SE SE NW section 29-19-9, was bottomed at 2,395 feet, plugged back to 2,238 feet and completed as a repressure well.

New work in Creek County: Link Oil Co. No. 13 Jones, SW NE NE section 32-18-7, an old well, was deepened from 2,171 feet to 2,257 feet, and was to shoot; Whitten & L. Wilcox No. 1-A Taconey, SW SW NW section 11-17-10, location; Sinclair Prairie Oil Co. No. 2 Wallace, SW SE SW section 24-18-9, was running 7-inch casing at 2,972 feet, total depth; L. B. Jackson No. 3 Alberta, C E half NE NW NW section 25-18-9, drilling at 445 feet; Johnson Oil Refining Co. No. 4 Beyl, NW SE NE section 27-20-9, drilling at 1,815 feet, the last named test being in Pawnee County.

Okmulgee County

B. H. Young Jr. No. 2 Bruner, SW NW SE section 5-15-14, Okmulgee County, had sand at 801-818 feet, total depth, was shot and pumped 20 bbls. of oil in 24 hours.

Earl and J. M. Tiffney's well in NE NW SE SE section 25-16-11 had Dutcher sand at 2,189 feet, total depth 2,244 feet, and pumped 2 bbls. of oil daily.

K. & K. Drilling Co. No. 3 Korp, CNL N half NW section 23-14-12, was drilling below 1,102 feet.

Muskogee County

F. Wagester No. 1 Dodson, SE SW SE section 6-14-19, Muskogee County, was dry and abandoned at 840 feet, total depth.

H. H. Heydrick No. 1 Bolby, C NE section 22-13-19, was a machine.

Okfuskee County

W. B. Wells No. 1-B Clark, SE NW NW section 11-10-11, Okfuskee County, was dry and abandoned at 2,130 feet, total depth.

Pottawatomie County

Magnolia Petroleum Co. No. 4 West, NE SE NE section 26-6-4, Gray area, Pottawatomie County, had Dolomite at 3,360 feet, total depth 3,436 feet, was acidized and pumped 60 bbls. of 39-gravity oil and 30 bbls. of water in 24 hours.

Ross Oil Co. No. 1-A Rilling, NW SW SW section 13-7-4, had spudded. Woodson Oil Co. No. 1-A Singletary, SE SE SW section 14-7-4, was a location.

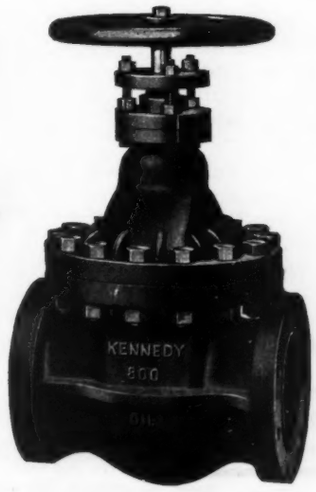
Stephens County

Carl Keister No. 2-B Jones, SW SE SE section 2-5-9w, Stephens County, was completed as a 3-bbl. pumper at 437 feet, plugged back from 706 feet, total depth.

Carl Carter No. 3 Warden C, SW NW NE section 3-1s-5w, was drilling below 360 feet. W. J. McAllister

Reliability

Economy



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Safety

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KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

No. 1-A Carpenter, SW SW NE section 11-2s-8w, was rigging up rotary tools.

Hughes County

Beaver Oil Co. No. 1 Shirk, SE NE SE section 5-6-8, Hughes County, was completed for 200 bbls. of oil, with 600 bbls. of water, from Booch sand at 2,818 feet, total depth 2,981 feet.

J. W. Nicks No. 1 Cox, NE NE NW section 21-9-9, was dry and abandoned at 1,648 feet, total depth.

Caddo County

One gas well was completed in the Cement field, Caddo County, at Ohio Oil Co. No. 2 Lemon, Account 2, SW SE SE section 2-5-9w. It had broken sand and limey shale at 4,099-4,250 feet, was bottomed at 4,500 feet and produced 28,889,983 feet of gas daily.

J. B. Nicholas No. 3-A Royce, NW NW NE section 12-5-9w, was a cellar. Magnolia Petroleum Co. No. 8 Hedlund, NE NW NE section 11-5-9w, had dug cellar and pits.

Additional New Work

In Cleveland County, Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 State, Tract 3, SW SE NW section 16-10-2w, was a rig.

In Garvin County, Skelly Oil Co. No. 1 Gibson, SW NW SW section 29-1n-3w, was a location.

In Carter County, Skelly Oil Co. No. 3 Miller, SW NW NE section 5-1s-3w, was building derrick; Gulf Oil Corp. No. 8 Garrett, C NW SW section 27-2s-3w, an 8,100-foot test in the Fox deep pool, had dug cellar and pits; same company's No. 2 Johnson, C SE NW section 27-2s-3w, an 8,100-foot test, was a location; same company's No. 2 McClure, C SE NE section 28-2s-3w, had dug cellar and pits.

In Jefferson County, W. G. Swartz No. 1-A Pennington, SW SW NW SE section 17-7s-5w, had spudded; Try Oil Co. No. 1 Reed, NW cor. section 19-7s-5w, was a rig.

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Dallas National Bank

DALLAS, TEXAS

Central West Fields

(Continued from Page 76)

SE SW NE section 7-8n-8w, was shut down at 1,739 feet. Felmont Corp., which helped open the Patoka pool in Marion County, Illinois, was drilling at 225 feet in No. 1 Riggs, SW cor. SE NW section 36-8n-8w. National Consumers Oil Co. No. 1 Ellery Hayden, C SE SE NW section 10-8n-10w, an old well deepened, topped Niagara lime at 2,534 feet, and shut down at 2,561 feet. Clarence Coats and others were drilling at 2,577 feet in No. 1 H. Sinclair, NE cor. NW NW section 11-8n-10w. It topped Niagara lime at 2,452 feet and had a trace of oil at 2,548 feet.

In Daviess County, A. T. Spaulding and others No. 2 Beck, SE cor. NE SW SE section 8-2n-5w, was at a total depth of 548 feet, in sand, but was shut down for engine repairs. Ben D. Ruble No. 1 Lydia Brewer, SW cor. SE SE SW section 33-3n-5w, was drilling at 252 feet.

In Spencer County, Troy Refining Co. has rig up for No. 1 Anderson, SE cor. section 11-6s-4w. Santa Fe Oil Co. No. 6 Gilbert Berg, NW cor. NE SE NW section 11-6s-4w, was shut down at 250 feet.

In Perry County, Charles E. Dice made location for No. 6 A. J. Peters, NW cor. section 11-5s-3w. A. J. Glenn has started drilling No. 1 Snyder, SW cor. NE NE SW section 21-5s-2w.

In Vigo County, Carter Oil Co. No. 2 Drake, C N half SW NW section 15-10n-10w, topped Devonian lime at 2,117 feet, had pay at 2,121-25 feet, and the hole filled 100 feet with oil in one hour. The crew was rigging to pump. The hole had been plugged back from 2,145 feet to 2,133 feet.

In Gibson County, Midwest Development Co. No. 3 John Thompson, in Donation 109, Township 1s-10w, had a showing of oil at 1,739 feet and a hole full of water at 1,815 feet, and was drilling at 1,816 feet. Big Four Oil & Gas Co. No. 6 Lottie Hope, SE cor. NE SW SE section 18-1s-9w, had a small showing of oil at 1,312 feet, and was shut down for repairs at 1,314 feet.

In Posey County, Mickel & Nelson No. 1 Aldridge, SE NE NE SW section 1-5s-13w, topped Golconda at 1,650 feet; had a hole full of water at 2,150 feet, and was underreaming 6⅝-inch casing to 2,153 feet. G. W. Miller and others No. 1 Doctor Jordan, NE cor. NW section 15-4s-12w, was shut down at 1,697 feet.

OHIO

FINDLAY, Ohio, Feb. 7.—Central Ohio fields yielded seven gas wells, two oil wells and two dry holes. The record for the week is as follows:

In Athens County, Lodi Township, Ross and others No. 1 Wayne Wingett, Fraction 13, made 60,000 feet of gas from the second Berea sand at 1,570-88 feet. In Guernsey County, Jackson Township, Seward Oil & Gas Co. No. 1 Robert Arbuckle, section 13, made a small gas well in the Berea at 1,149-65 feet. In Knox County, Jackson Township, Preston Oil Co. No. 3 Loyd Bailey, section 10, pumped 49 bbls. of oil the first 24 hours after a shot in the Clinton sand at 3,119-69 feet. In Lorain County, Grafton Township, Dillon & McFrederick No. 1 Jemima A. Mousseau, Lot 45, is good for 436,000 feet of gas from Clinton sand at 2,546-54 feet. In Meigs County, Salisbury Township, Harry Smith and others No. 5 Athens Pomeroy Coal & Land Co., section 32, made 185,000 feet of gas from the Maxon sand at 980-1,000 feet. In Muskingum County, Harrison Township, Hopewell Gas & Fuel Co. No. 1 Charles Enoch, section 2, made 2,826,000 feet of gas from Clinton sand at 3,965-4,015 feet.

In Tuscarawas County, Franklin Township, East Ohio Gas Co. No. 1 Maconel Coal Co., section 3, had a show of gas in the Clinton sand from 4,499-4,500 feet, was shot but did not improve. It was plugged and abandoned. In Washington County, Grandview Township, C. D. Uhl & Co. No. 5 John A. Huffman, section 22, made 8 bbls. of oil the first 24 hours after a shot in first Cow Run at 804-10 feet. Ludlow Township, Hope Construction & Refining Co. No. 3 Katie Pryor, section 28, is good for 134,000 feet of gas per day from the Berea at 2,007-14 feet. In Palmer Township, Swingle and others No. 37 Clarence D. Palmer, Lot 1,077, was dry in first Cow Run at 571-90 feet.

In Wayne County, Clinton Township, Ohio Fuel Gas Co. No. 1 Ora Blachly, section 7, made 456,000 feet of gas from Clinton sand at 3,134-52 feet.

Lima Field

In Wood County, Jackson Township, George W. Spohn and others No. 1 J. B. Dishong, SE quarter of section 21, was a gas well in the Trenton lime. Top of Trenton was found at 1,483 feet. Same company is drilling a test a quarter of a mile east of No. 1 Dishong on the Abram Hawkins tract.

In Putnam County, Blanchard Township, section 22, the Morton Stewart Petroleum Co. is spudding No. 8 W. D. Williams. In same township and section Brown Oil Co. is rigged up on the No. 3 L. O. McCullough.

WESTERN KENTUCKY

OWENSBORO, Ky., Feb. 7.—In a featureless week in the Western Kentucky fields three oil wells, one gas well and two dry holes were completed, and seven new operations started. The week's developments included the following wells:

In Breckenridge County, Cloverport district, Flescher, Galey and others No. 4 Murray Tile Co., a deep test, was drilling at 540 feet.

In Daviess County, St. Joseph district, J. P. Warren No. 1 Jennie Waltrip was a dry hole at 1,524 feet. Stray sand was found at 1,425-33 feet, and Jett sand at 1,507-20 feet.

In Hancock County, Easton district, W. E. Hupp and others No. 5 Emma Poole was rigging up; in the Goering district, Cumberland Petroleum Co. No. 3 Lambert & Morris was spudding in.

In Henderson County, Niagara district, Clark & Snyder No. 5 W. C. Cooper was spudding in.

In McLean County, North Livermore district, W. K. Snyder and others No. 1 Richard Shockley is a 30-bbl. completion in Bethel sand at 1,092-1,116 feet. Total depth 1,117 feet. It was not shot. In the Island district, South Penn Oil Co. made a location for No. 3 Alma Nall.

In Muhlenberg County, Bremen district, Peerless Oil Co. was moving in machine to start No. 1 C. C. Gossett. In the Paradise district, South Penn Oil Co. No. 2 Rogers-Crescent Coal Co., deep test, was drilling at 600 feet in a 16-inch hole.

In Ohio County, Adaburg district, Rex-Pyramid Oil Co. No. 3 P. R. Wells was spudding in. In the Friendship Church district, A. Teller and others No. 2 A. H. Medcalf East Tract was good for 20 bbls. initially from Barlow sand at 608-21 feet; it was shot with 60 quarts. Henry Scholl and others No. 3 Ida Farmer is a Jackson sand gas well. In the Dundee district, Globe Oil Co. No. 24 Rommey Graham was a 40-bbl. initial producer from Jackson sand at 520-45 feet; shot with 60 quarts at 520-40 feet. Total depth 545 feet. In the Heflin district, W. W. Damron and others No. 4 G. C. Rowan is a 50,000-foot gas well from Jones sand at 1,155-87 feet. Total depth 1,192 feet. It may be drilled deeper. In the Fordsville district, Cumberland Petroleum Co. and others No. 1, a joint line deep test, was drilling at 610 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Feb. 7.—Completions in the Eastern Kentucky field in the past week included one gas well, five oil wells and one dry hole.

The outstanding oil well reported is No. 3 on the Jesse Frily farm on Duck Fork in the Ida May district of Lee County. This well was completed at a total depth of 878 feet and has a daily production of 100 bbls. of oil. McCoun & Wissing completed No. 9 on the Andrew Combs land on Billie's Fork, in the Big Sinking district of Lee County, at a total depth of 1,138 feet, with an initial daily flow of 50 bbls. The Fleiger Oil Co. No. 1 on the same farm completed at 1,012 feet was a 2-bbl. well.

South Penn Oil Co. No. 7, on the William Adams, Jr., farm in district No. 18, South Fork, in Powell County, made an initial production of 6 bbls.

Petroleum Exploration completed No. 4 on the William Haupt land, on Duck Fork in the Ida May

district of Lee County, total depth not learned. It started at 4 bbls. per day. The firm expects to shoot the well soon.

The Kentucky-West Virginia Gas Co. drilled a dry hole in No. 5235, on the C. W. Preece farm on Cold water Fork in Martin County, total depth 1,414 feet. The same firm reports the completion of No. 560 on the Melissa Ward land on Rock House Fork of Rockcastle, Martin County, at a total depth of 2,777 feet. This well has a reported daily production of 202,000 feet of gas from shale.

Drilling operations, by counties, follows:

In Powell County, Mrs. Agatha Wireman was drilling at 600 feet in No. 24 J. M. Townsend, in the South Fork district of Powell County. Wireman Brothers are down 200 feet in No. 3 Albert Stewart in the same district. South Penn Oil Co. was drilling at 200 feet in No. 10 on the Adams & Lamberson land on South Fork. Raymond Smyth was drilling at 150 feet in No. 9 at Fitchburg on the H. E. Stewart land. The 21 Oil Co. has drilled two new wells and cleaned out two old ones on the Matt Lawery farm. One of the wells is expected to make 15 bbls. per day but the others are light producers.

In Magoffin County, C. J. Sipple & Co. has resumed operations at No. 7 on the William Salyer farm on Birch Branch in the Burning Fork district of Magoffin County. This has been set up for some time but has been down on account of water. Drilling is continuing at the 250-foot mark.

In Lee County, South Penn Oil Co. is down 400 feet in No. 97 on the Flahaven Land Co.'s land on Big Sinking in the district of that name in Lee County. Thomas Witmer is down 425 feet in No. 8 on the C. J. Tipton land in the same district but on Billie's Fork.

In Martin County, Kentucky-West Virginia Gas Co. is down 1,460 feet in sand in No. 5232 on the C. W. Preece land on Coldwater Fork and is shut down at No. 5236 on the same farm. The same company is grading location for No. 5237, also on the Preece land.

In Floyd County, Inland Gas Corp. was drilling at 2,262 feet in No. 197 on the J. C. Hopkins land on Stratton Branch of Levisa Fork in Floyd County. Kentucky-West Virginia Gas Co. is down 1,902 feet, in Maxon sand, in No. 563 on the H. H. Smith land near Mouth Camp Branch of Levisa Fork. The same company had reached the 1,868-foot level in No. 565 J. I. Stepp, nearby and is idle at No. 567 M. Slone and M. D. Slone, in the same locality. Kentucky-West Virginia Gas Co. is moving in at No. 568 Samuel Dillon, on Ivy Creek of Levisa Fork and had started No. 5233, John F. Burchett land, on Cow Creek.

In Pike County, Inland Gas Corp. is down 1,000 feet, in slate, in No. 196 on the Helen Leslie land on Levisa Fork, Pike County.

East Texas Fields

(Continued from Page 68)

ing below 8,287 feet in basat Travis Peak. Another gas sand was reported found last week. This well is now credited with having penetrated several high pressure gas zones. With the slowly diminishing gas-oil ratios in the East Texas field, the gas being developed by the Longview test may become an important factor in the field's later life.

Sulphur Bluff Field

The commission's salt water report for the Sulphur Bluff field showed a daily water production of 342 bbls. from the field's producers, 19 of which are pumping and eight flowing. Walter Goldston and others No. 10 Smith, first deep Trinity test made at Sulphur Bluff, found the Lower Glen Rose barren of oil, and has been plugged back from its original total depth of 6,600 feet to 4,600 feet for completion in the Paluxy by gun perforating casing from 4,500 feet to 4,520 feet.

EAST TEXAS FIELD COMPLETIONS

(One hour tests)

Gregg County

Longview area: Arkansas Fuel Co. No. 18-A J. and R. McKinley, 3,581-3,606 feet, 65 bbls. Atlantic Refining Co. No. 8-A A. Tooke, 3,534-3,655 feet, 38 bbls. Humble Oil & Refining Co. No. 15 Willingham, 3,628-29 feet, 52 bbls. Magnolia Petroleum Co. No. 10 Goolsby, 3,552-74 feet, 120 bbls.; No. 11 C. Jones, 3,603-14 feet, 80 bbls. Margay No. 4 J. Freeman, 3,687-93 feet, 76 bbls. Peyton No. 6 J. M. Christian, 3,572-3,605 feet, 60 bbls. B. F. Phillips No. 9-B L. P. League, 3,590-96 feet, 40 bbls. Shell Petroleum Corp. No. 23 H. Hampton, 3,622-63 feet, 60 bbls. Sinclair Prairie No. 21 M. Lawson, 3,514-40 feet, 90 bbls. Stanolind Oil & Gas Co. No. 8-B Jones, 3,581-3,666 feet, 61 bbls. Sun Oil Co. No. 27 J. W. Aiken, 3,506-15 feet, 61 bbls.; No. 18 M. C. Satterwhite, 3,570-3,654 feet, 44 bbls. Tide Water Oil Co. No. 29 J. R. Castleberry, 3,570-83 feet, 51 bbls.; No. 18 Sheppard, 3,617-33 feet, 72 bbls.

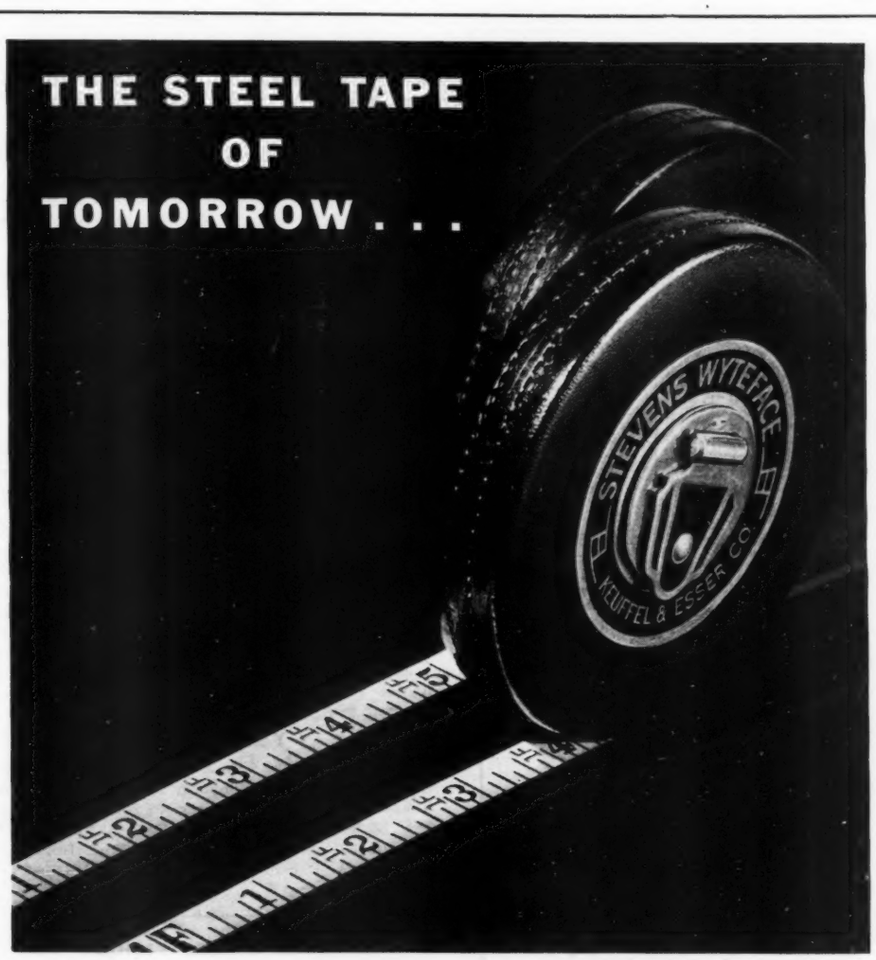
Kilgore area: Carroll & Thompson No. 1 Jerry Rider, 3,540-45 feet, 25 bbls. Hall & Hall No. 3 R. Dickson, 3,523-77 feet, 18 bbls.; No. 4 R. Dickson, 3,524-80 feet, 3 bbls. Hamil & Smith No. 2 P. E. Barton, 3,526-59 feet, 60 bbls. Magnolia Petroleum Co. No. 4 Mary Gogne, 3,607-20 feet, 85 bbls. Overton Refining Co. No. 3 King Bros., 3,523-25 feet, 40 bbls. Sun Oil Co. No. 18 Pentecast, 3,614-58 feet, 55 bbls. Tide Water Oil Co. No. 34 Hughey, 3,452-69 feet, 1 bbl. Wells & Gann No. 4 M. Charles, 3,664-65 feet, 57 bbls.; No. 5 G. Johnson, 3,525-26 feet, 80 bbls.

Rusk County

Kilgore area: Gulf Oil Corp. No. 11 H. Baron, 3,563-3,654 feet, 7 bbls. Humble Oil & Refining Co. No. 10 V. E. Reed, 3,606-65 feet, 60 bbls. T. S. Schroeder No. 3 M. Kennedy, 3,653-78 feet, 20 bbls.

Joiner area: Ambassador Oil Co. No. 3 Hamilton, 3,749-62 feet, 70 bbls.; No. 9 London School, 3,746-63 feet, 70 bbls.; No. 11 London School, 3,750-66 feet, 60 bbls. F. W. Fisher No. 1 D. Wooley, 3,753-65 feet, 60 bbls. Humble Oil & Refining Co. No. 16-C Ida Holt, 3,710-57 feet, 60 bbls.; No. 5 A. Simmon, 3,752-62 feet, 70 bbls.; No. 14 J. E. B. Sneed, 3,730-41 feet, 72 bbls.; No. 15 J. E. B. Sneed, 3,730-43 feet, 63 bbls. P. G. Lake No. 5 B. F. Maxwell, 3,684-3,712 feet, 28 bbls. Ohio Oil Co. No. 37 E. E. Moore, 3,625-70 feet, 26 bbls. Pine Petroleum Co. No. 4 A. Trash, 3,682-3,701 feet, 75 bbls.

M. Ruebin No. 3-B W. P. Keeling, 3,732-61 feet, 45 bbls. Shell Petroleum Corp. No. 5 W. P. Brett, 3,695-3,745 feet, 47 bbls. Sinclair Prairie No. 8 J. B. McCord, 3,604-75 feet, 47 bbls. J. B. Sneed No. 6 G. Gossett, 3,680-81 feet, 20 bbls. Theron Oil Co. No. 3 Deason, 3,616-72 feet, 30 bbls. Tres Oil Co. No. 4



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A. D. Deason, 3,644-79 feet, 30 bbls. Mid-States Oil Co. No. 12 R. Dark, 3,705-69 feet, 45 bbls. I. N. Williams No. 4 Willy, 3,631-65 feet, 25 bbls. Yates-Hunt No. 5 R. A. Motley, 3,771-72 feet, 60 bbls.

Upshur County

Longview area: L. & G. Oil Co. and Dean Bros. No. 1 Monk Heirs, 3,713-14 feet, 34 bbls. Humble Oil & Refining Co. No. 40 I. D. Smith, 3,612-45 feet, 60 bbls. Rudco Oil & Gas Co. No. 2 Nicholson, 3,772-73 feet, 42 bbls.

EAST CENTRAL TEXAS COMPLETIONS

Angelina County

J. C. Bonham No. 1 Cameron Lumber Co., dry and abandoned at 610 feet.

Limestone County

Pure Oil Co. No. 16 T. Kendrick, dry and abandoned at total depth of 8,845 feet, plugged back to 3,291 feet.

Franklin County

In the Talco field, Byrd-Frost No. 1 Sanders, 4,189-93 feet, 21 bbls.

Titus County

Magnolia Petroleum Co. No. 13 W. H. Crawford, dry and abandoned at 4,350 feet.

NORTH TEXAS COMPLETIONS

Archer County

Cochburn Oil Co. No. 3 T. V. Carr B, 1,375-87 feet, 20 bbls. Danson Oil Co. No. 9 S. M. J. Benson A, 932-40 feet, 25 bbls. Sam Viersen No. 1 W. P. Ferguson, 3,808-60 feet, 375 bbls. Westmount Oil Co. No. 5 T. J. Demsey, 1,772-83 feet, 145 bbls.

Clay County

Bridwell Oil Co. No. 10 H. C. Edrington A, 1,117-25 feet, 50 bbls.

Cooke County

Keil and others No. 2 J. J. Perkins, 1,081 feet, dry. Mudge Oil Co. No. 21 A. Johnson, 1,197-1,230 feet, 80 bbls. A. D. Robinson No. 11 J. H. Otto B, 1,232-60 feet, 48 bbls.

Jack County

Bennett Petroleum Corp. No. 1 J. Matlock, 2,960-3,089 feet, 525 bbls., wildcat. Brazos River Gas Co. No. 5 Mrs. P. B. Keyser, 3,035 feet, dry. W. R. Dearing and others No. 7 S. M. Jones, 3,030-80 feet, 375 bbls. B. C. Gilmore No. 1 J. D. Gillespie, 605 feet, dry. W. H. Hammon No. 1 G. C. Miller, 3,030 feet, dry.

Montague County

Bridwell Oil Co. No. 1 W. W. Radford, 3,637 feet, dry; No. 15 Mrs. M. H. Salmon A, 1,616-30 feet, 11 bbls. Lesh & McCall No. 5 Mrs. C. L. Davenport, 2,350-73 feet, 25 bbls.

Wichita County

L. T. Burns No. 23 First National Co., 3,613-3,850 feet, 338 bbls. Deep Oil Development Co. No. 8 First National Co., 3,650-3,845 feet, 793 bbls. Fain-McGaha No. 1 fee, 3,765-3,841 feet, 751 bbls. Geier Bros. & Jackson No. 1 C. F. Ancell, 3,990 feet, dry. Grace & Wood No. 2 W. L. Hodges, 3,762-3,930 feet, 516 bbls. W. E. Hammon No. 1 H. Lalk, 950 feet, dry. Kadane-Griffith Oil Co. No. 2 J. A. Kemp, 3,668-3,765 feet, 800 bbls. King Oil Co. No. 1 H. Wigley, 3,770-3,845 feet, 825 bbls. Pois & Schulz No. 7 Ed Foster C, 1,291 feet, dry. H. L. Roach No. 1 Love, 527 feet, dry. Rubsam & Hunter No. 20 McClure A, 569-87 feet, 11 bbls. T. L. Wynne Tr. No. 1 Waggoner Bros., 3,846-3,922 feet, 700 bbls.

Young County

Paul Atchley No. 9 S. M. J. Benson, 595-912 feet, 65 bbls. Chambers & Humphrey No. 1 S. M. J. Benson A, 1,000 feet, dry. S. D. Glover No. 4 Hennig, 1,077-88 feet, 12 bbls. L. A. Long and others No. 1 F. A. Burnett, 3,815 feet, dry. J. G. Steele No. 1 Drum, 510 feet, dry. A. T. Strong No. 1 B. W. King, 3,815-3,980 feet, 750 bbls.

West Texas Fields

(Continued from Page 79)

Shell Petroleum Corp. No. 1 Nan-Leck, 2,760-3,060 feet, 343 bbls. Texas Pacific Coal & Oil Co. No. 6 Duval, 2,535-3,080 feet, 1,198 bbls.

Upton County

Anderson No. 4 Elder, 2,335-80 feet, 804 bbls. Roy Brown No. 1-B Powell, dry and abandoned at 2,878 feet. Gulf Oil Corp. No. 167 McElroy, 2,800-3,020 feet, 483 bbls.; No. 15 Sherk, 2,260-2,315 feet, 607 bbls.

Ward County

Gulf Oil Corp. No. 68 Estes, 2,542-2,690 feet, 132 bbls.; No. 73 Estes, 2,504-2,680 feet, 530 bbls.; W. C. Proctor No. 7 Cole, 2,185-2,255 feet, 159 bbls.

WEST CENTRAL TEXAS COMPLETIONS

Jones County

Bells Wells Oil Co. No. 1 R. L. Pond, abandoned as dry at 3,504 feet. Thomas D. Humphrey No. 1 J. C. Fielder Estate, abandoned as dry at 3,320 feet. Guitar Trust Estate No. 11 fee, pumped 121 bbls. in 24 hours after 2,000-gallon acidization at 1,982 to 2,004 feet, total depth.

Shackelford County

Chester M. Yell No. 1 M. Smalley, abandoned dry at 290 feet. W. M. Reed No. 4 C. H. Arendt, abandoned dry at 263 feet. Albany Oil Co. No. 1-A G. R. Davis, abandoned dry at 1,727 feet. Charter Oil & Gas Co. No. 2 G. R. Davis, abandoned dry at 1,714 feet. Butler & Horne No. 18 J. P. Morris, 15 bbls. oil per day and 10,000 feet gas at 1,580 to 1,601 feet, total depth. J. L. Hart and G. M. Neff No. 1 L. A. Sanders, abandoned dry at 772 feet.

Callahan County

Phillips Petroleum No. 1 Cozart, abandoned dry at 4,140 feet, total depth, 2½ bbls. sulfur water per hour 4,138 feet. Prather & Virdell No. 2 Ace Hickman, abandoned dry at 566 feet, total depth.

PANHANDLE COMPLETIONS

(24-hour production)

Carson County

Danciger Oil & Refining Co. No. 3 Block, 3,029-49 feet, 238 bbls. Magnolia Petroleum Co. No. 33 fee, 3,003-3,150 feet, 248 bbls.

Gray County

Magnolia Petroleum Co. No. 8 E. Haggard, 3,270-3,310 feet, 124 bbls. Smith Bros. No. 1 K. Arends, 3,255-3,300 feet, 628 bbls.

Hutchinson County

L. S. Chism No. 2 Loving, 3,000-30 feet, 412 bbls. Gulf Oil Corp. No. 77 Dial, 2,994-3,053 feet, 470 bbls. Huber Petroleum Co. No. 3 State Riverbed, 2,663-2,716 feet, 743 bbls. Cy Rieger No. 2 Hodges B, 3,026-43 feet, 143 bbls. Stanolind Oil & Gas Co. No. 13 Haile, 3,010-90 feet, 408 bbls; No. 6 Watkins, 2,825-83 feet. 224 bbls. Watchorn Oil Co. No. 2 Whittenburg F, 2,636-2,705 feet, 303 bbls.

Kansas Fields

(Continued from Page 84)

Wilcox sand at 3,668-85 feet, total depth, and was dry and abandoned.

Harvey County

Westgate-Greenland and others No. 1 Welch Estate, NW NW SE section 31-23-3w, Harvey County, was an abandoned location.

Other New Activity

In Barber County, Carter Oil Co. and L. H. Wentz No. 1 Lytle, C NE NW section 6-32-14w, was a rig.

In Cowley County, Phillips Petroleum Co. No. 1 Newton, SW SW NW section 15-30-4, was a location. A. Brewer No. 1 Clark, C E half NE SE NW section 6-31-4, had rigged up standard tools.

In Pawnee County, Kessler and British American Oil Producing Co. No. 1 Belt, SE SE NW section 13-20-16w, was a rig.

In Pratt County, Cities Service Oil Co. and others No. 1 Delavey, C E half SE SW NE section 13-26-12w, was a location.

In Stevens County, Stevens Oil & Gas Co. No. 1 Spikes, C NE SW section 21-31-38w, set 10-inch casing at 495 feet.

In Woodson County, Sheedy and others No. 11 Klick, SE SE SW section 20-25-14, was a location.

California Fields

(Continued from Page 82)

of 15.9-gravity oil daily from 1,750 feet, and Oliver & Owen completed No. 1 Moritz, pumping 121 bbls. of clean 16.1-gravity oil per day from 1,650 feet.

In the Huntington Beach field Standard Oil Co. completed No. 34-A, pumping 130 bbls. of 17.3-gravity oil daily from 4,450 feet.

In the West Coyote field where Severns Drilling Co. recently completed No. 2 McNally as a commercial producer Standard Oil Co. has staked location for No. 66 Emery and No. 2 Bastanchury as offsets to this new well and rig material should be on ground within another few days. In the Shiells Canyon field of Ventura County, Texas Co. has completed No. 134 Shiells flowing 149 bbls. of 22.9-gravity oil daily from 3,814 feet after installation of a compressor.

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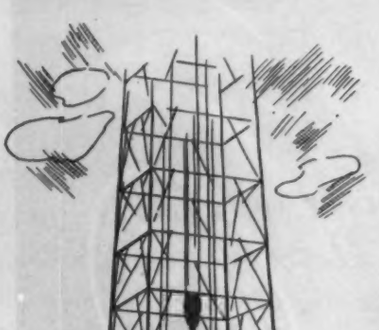

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Feb. 5. — Crude oil and naphtha production of all Alberta fields in December was officially reported at 394,893 bbls., an average of 12,738 bbls. per day.

Comparative figures for 1937 and 1938 in barrels in the Alberta fields are:

Field—	Barrels 1936	Barrels 1937
Turner Valley limestone	1,274,119	2,756,632
Turner Val. shallow	13,119	10,589
Red Coulee light	17,937	13,790
Wainwright heavy	14,957	13,559
Miscellaneous	310	2,338
Total	1,320,442	2,796,908
Daily average	3,618	7,663

Turner Valley Producers

In the Turner Valley field in December, the largest producing group was the four Sterling Pacific wells, with 70,989 bbls. Other Royalite wells ranked second, with 39,969 bbls. Davies-Royalite No. 2 produced 33,299 bbls.; Brown Oil Corp., with two wells, 27,457 bbls.; National Petroleum Corp. No. 1 yielded 23,312 bbls. and Prairie Royalties No. 1 yielded 22,459 bbls. All these wells except National Petroleum No. 1 were prorated at 35 per cent of their potential. Among new completions, Commoil No. 1 had 12,122 bbls.; Firestone Petroleums No. 1 yielded 10,838 bbls.; Model-Spooner-Reward No. 1 had 11,609 bbls.; Royal Canadian No. 1 was 10,509 bbls. and Sunset Oils No. 1 made 7,029 bbls. for part of the month.

Production Stepped Up

Following a second acid treatment, Brown Oil Corp. No. 1, LSD 14, section 16-18-2w5, increased its potential from around 1,500 bbls. a day to over 3,000 bbls. flush. Brown No. 2, LSD 8, section 20-18-2w5, previously rated at over 500 bbls., was increased to about 1,000 bbls. flush. New potentials are being officially tested.

Sunset Oils No. 1, LSD 10, section 20-18-2w5, finished in the lime at 7,475 feet recorded a potential of 1,721 bbls. a day after acid treatment, with heavy gas flow. Prorated production is 722 bbls. Royal Canadian Oils No. 1, LSD 15, same section, with natural potential of 920 bbls. is being acidized. West Flank Oil Co. No. 2, N half LSD 1, section 32-18-2w5, finished in the lime at 6,827 feet with 500 bbls. flush production, is testing potential after acid treatment.

West Side Drilling

In section 29-18-2w5, Davies Petroleums No. 1, LSD 2, is in the Blairmore formation below 5,930 feet and getting close to the Home sand. Sunburst Oil Co. No. 1, N half same LSD, is below 5,918 feet and expected to get the Madison limestone around 6,025 feet.

In section 21-18-2w5, Brown Oil Corp. No. 4, LSD 4, is below 5,018 feet.

In section 20-18-2w5, Sunset Oils No 2, LSD 7, will start work this month. Location is a quarter mile south of Sunset No. 1 producer, on acreage of Okalta Oils, Ltd. York Oils No. 1, LSD 2, is below 720 feet.

In section 16-18-2w5, Royal Canadian Oils No. 2, LSD 4, is starting derrick. Okalta Oils No. 7, LSD 3, has spudded. It is having difficulty with gravel and boulders and is carrying 21-inch casing to hold off caving. This will be pulled after the 18-inch is set around 250 feet. Okalta No. 8, LSD 6, same section, is installing machinery. In the far south, Davies Petroleums No. 3, LSD 7, section 33-17-2w5, is below 225 feet.

Okalta Structure

On the Okalta fold, west of the main producing area, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is rigging rotary equipment to resume from 3,805 feet.

Scottish Petroleums No. 1, LSD 16, section 19-18-2w5, is below 600 feet.

West Central Area

In West Central Turner Valley, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, finished at 6,771 feet after getting the Madison limestone at 6,335 feet, proved noncommercial and is being shot with 400 quarts in the upper porous horizon of the lime. If production develops, it will probably be acidized. It is 4 miles north and about a mile farther west of the main crude area. The trend of the structure is, however, northwest and southeast, so that if the west flank crude area is continuous it may lie still farther west.

Tests in the Limestone

On the Turner Valley west flank, Richland Royalties No. 2, LSD 5, section 28-18-2w5, is below 6,808 feet after getting the Madison limestone at 6,410 feet. It has developed substantial gas production and there is considerable oil in the casing. Production test will be made inside another 100 feet, with a good producer expected.

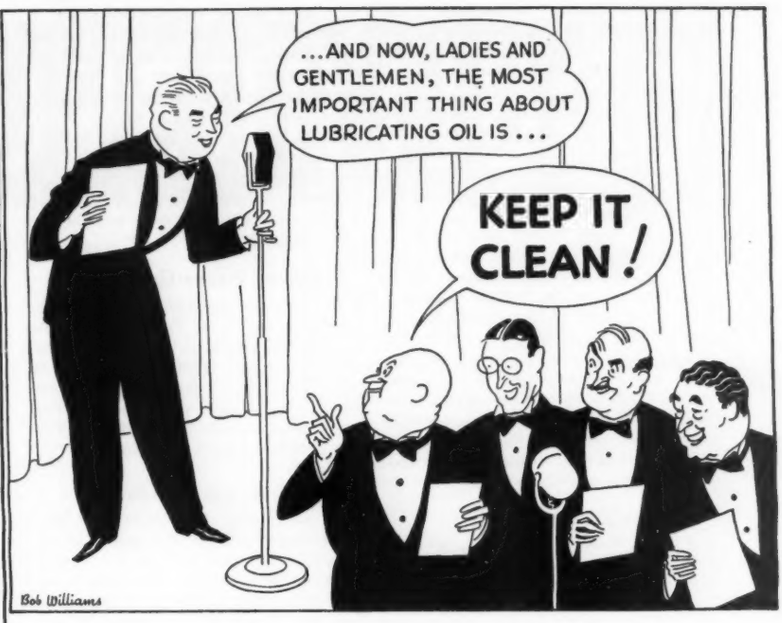
In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, is below 6,731 feet after getting the limestone at 6,570 feet.

In section 32-18-2w5, Royalite Oil Co. No. 28, LSD 16, got the Madison limestone at 6,429 feet and is preparing to resume after cementing casing.

New Drilling Planned

East Crest Oil Co., which has not been active in South Turner Valley development since 1931, has acquired LSDs 9, 15 and 16, section 6-19-2w5, from Okalta Oils, Ltd., and will drill a well due west of the Mercury and Miracle wells. The Okalta company will receive 10 per cent royalty on production less than 500 bbls. daily and 15 per cent if it exceeds that figure. Acreage is a half mile west of the nearest producer. The East Crest Oil Co. owns three small naphtha wells in the older section of the field.

A British Columbia group, represented by Col. Victor Spencer, Norman Whittall, George A. Martin and Frank McMahon



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For further information on the application of Purolator for either gasoline or Diesel engines, write to Motor Improvements, Inc., Newark, New Jersey.

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The Oil Filter

of Vancouver and F. Sommerville of Regina, Saskatchewan, is arranging for the drilling of three tests on acreage in section 32-18-2w5, west of the present active development.

South of Turner Valley, Willow Creek Holding Co. has taken over 5,024 acres in Townships 14, 15 and 16, Range 2w5, from Oliver B. Stockford, George W. Jackson and associates. The acreage extends 11½ miles north and south, following the main Pekisko fault which is close to the axis of the fold. Leases were originally located by Philip Minor, geologist, of Wyoming. The Willow Creek and Rice Creek wells drilled on these holdings got fair oil showings, but were not carried to conclusive depth; and the Alberta Associated Oils well on the same structure, about three-quarters of a mile west of the north limit of the acreage, also got good showings. The logs indicate somewhat shallower drilling than in the Turner Valley crude area.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 29 Turner Basin, LSD 7, section 27-20-3w5, is below 6,447 feet after getting the Madison lime at 6,275 feet.

Driller as Fishing Tool

At Okalta Oil Co. No. 7 recently a new method of fishing was employed by William Herron, Jr., when the bit broke off the stem at 200 feet, in a 20-inch open hole. Herron ordered himself let down by rope and with a flashlight looked the job over. He went down a second time with the necessary equipment, and recovered the bit. The fishing job took approximately 60 minutes.

East Side Drill'ng

On the Calling Valley structure east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, section 8-20-2w5, is below 6,600 feet with samples indicating a change of formation.

On the Aldersyde-High River structure, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, has resumed work after several months' shutdown. The hold bottoms in the Upper Dalhousie formation at 7,230 feet logging somewhat higher than the Arca deep test farther west and south.

Green Valley Gets Lime

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, got the Madison limestone at 5,355 feet and deepened to 5,390 feet where 6-inch casing was cemented. The hole has logged closely with Turner Valley wells, but considerably higher.

Tests in the Foothills

On the Brazeau structure in the northern foothills west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 7-43-17w5, is preparing to resume after cementing 18-inch casing at 415 feet.

On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is preparing to drill into production from 5,305 feet where 6⅝-inch casing was cemented on top of the brown sands of the Dalhousie formation.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 3, section 25-9-17w4, reached the Madison limestone at 3,280 feet and cemented casing at 3,285 feet preparatory to drilling into production, which is expected around 3,310 feet.

On the Rogers-Imperial structure, the Range Oil & Gas Co. No. 2, LSD 15, section 20-1-11w4, is below 1,520 feet.

South of Magrath, Lyons-McIntyre No. 1, LSD 14, section 19-3-21w4, has resumed from 2,250 feet.

Ontario Drilling

In the DeClute field, Kent County, Ontario, Gas Producers Syndicate No. 4, Pardo farm, Raleigh Township, was deepened to 1,564 feet, increasing its production to around 3,000,000 feet a day. Union Gas Co. No. 39, W half Lot 146, Talbot Road North, Raleigh Township, is rigging.

On the eastern fringe of the Tilbury field, Kent County, Union Gas Co. No. 296, SW Lot 160, North Talbot Road, Raleigh Township, is deepening below 1,300 feet after getting an initial gas production of 100,000 feet a day.

In Camden Township, Kent County, Roth Syndicate No. 1, Lot 9, Concession 2, has a small pumping production from the shallow oil horizon below 300 feet.

In the Brownsville field, Oxford County, Adams-McCutcheon-Aikens No. 1 has been located in NW quarter Lot 27, Concession 12, Dereham Township.

In Yarmouth Township, Elgin County, Oldreeve & McKechnie No. 1, Miller farm, Lot 12, Concession 10, is below 1,250 feet.

In Beverley Township, Wentworth County, Rockton Oil & Gas Syndicate No. 2, Lot 30, Concession 4, is below 4,020 feet.

In the north end of Oxford County, near St. Mary's, Volcanic Gas & Oil Co. No. 4 has been located in Lots 34-35, Concession 7, West Nissouri Township.

N. Y.-Penna. Gas Fields

COUDERSPORT, Pa., Feb. 7.—Two wells were completed in the New York-Pennsylvania Oriskany sand gas fields during the past week but the most interesting development was the increased flow of gas in Evjen and others' wildcat on the Dusenberry farm in Watson Township, Warren County, Pennsylvania.

This test, in south central Warren County, is south of previous Oriskany tests which either proved dry holes or turned to salt water before putting gas into the line. It reached the top of the Oriskany at 4,478 feet and is shut down at 4,482 feet for casing. At that depth the flow gauged 1,000,000 feet, increasing from 20,000 feet at the first 2 feet of sand.

Both wells completed last week were in Woodhull field of Steuben County, New York, raising the total of completed wells there to 26.

The Williamsport Oil & Gas Co. completed a well on the Della Lampson farm with an initial open flow of 9,000,000 feet and an initial rock pressure of 1,320 pounds. This well topped the Oriskany at 3,793 feet and was completed at a total depth of 3,803 feet.

Sylvania Corp. completed its well on the John Allen farm with an initial open flow of 9,500,000 feet and an initial rock pressure of 1,370 pounds. The Oriskany was found at 4,107 feet and the well was completed at 4,131 feet.

Gas Well Ablaze

GLENVILLE, W. Va., Feb. 7.—An 83-foot column of blazing gas marked the site of a new 3,760,170-foot gas well drilled in by the Pittsburgh and West Virginia Gas Co. on the Dolph Moffett farm 5 miles south of Glenville.

The well caught fire a second time from a burning walking beam after workmen extinguished the first blaze with live steam.

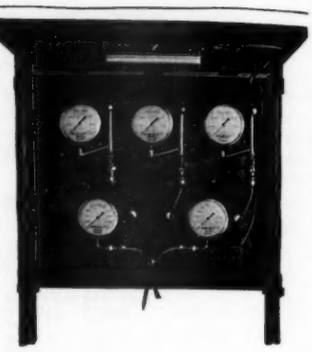
It was said to have first ignited from an electric light bulb crushed between the casing and tubing.

Drilling Contractors

(Continued from Page 71)

Patricio County; has rotaries running for himself in the Heyser field, and one on location in the Jefferson area for the Fohs Oil Co.

Ownby Drilling Co. is spudding No. 1 Myers, 3,000 feet east of the discovery well of the Fairbanks field, Harris County. It is being drilled jointly with E. L. Smith.



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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	981	sd. sh. drlg.
Hancock-Bush, No. 2-W Santa Maria, Santa Barbara	30-10-33	3,581	sd. sh. drlg.
Hancock-Bush, No. 2-C.L. Santa Maria, Santa Barbara	30-10-33	4,312	pump. 430 b.d.
Hancock-Bush, No. 2-R Santa Maria, Santa Barbara	25-10-34	3,299	sd. sh. drlg.
Anderson, Joseph, No. 1 A. & T., S. Maria, S. Barbara	28-10-34	3,671	sd. sh. drlg.
Edco Oil, No. 1 Santa Maria, Santa Barbara	27-10-34	4,391	pump. 450 b.d.
De Laine Pet., No. 3-M Santa Maria, Santa Barbara	27-10-34	4,456	flow. 585 b.d.
Cal. Lands, Inc., No. 2 Santa Maria, Santa Barbara	26-10-34	5,325	flow. 490 b.d.
Moore, E. H., No. 13-E Sugar, Santa Maria, S. Barbara	24-10-35	4,950	sd. sh. drlg.
Moore, E. H., No. 1-G Sugar, Santa Maria, S. Barbara	19-10-34	5,007	sd. sh. drlg.
Pet. Sec., No. 1-R Santa Maria, Santa Barbara	35-10-34	5,435	pump. 930 b.d.
Signal Oil, No. 2 Romalho, Santa Maria, S. Barbara	27-10-34	3,751	sd. sh. drlg.
Union Oil, No. 3 Mor., Santa Maria, Santa Barbara	24-10-34	2,805	P.B. 2,525
Union Oil, No. 2-B Santa Maria, Santa Barbara	24-10-34	2,615	sd. sh. drlg.
Union Oil, No. 1 Wheat, Santa Maria, Santa Barbara	22-10-34	3,996	sd. sh. drlg.
Union Oil, No. 17 Cal. Coast, Orcutt, Santa Barbara	26- 9-34	4,515	looks wet
Union Oil, No. 20 Squires, Orcutt, Santa Barbara	27- 9-34	3,899	sd. sh. drlg.
Cole, F. E., No. 16 Santa Maria, Santa Barbara	23-10-34	3,315	rig. to pump
Jones, F. E., No. 1-W, Santa Maria, Santa Barbara	27-10-34	2,000	sd. sh. drlg.
Pac. West. Oil, No. 2-S, Santa Maria, Santa Barbara	27-10-34	4,950	flow. 1,975 b.d.
Pac. West. Oil, No. 3-D, Santa Maria, Santa Barbara	27-10-34	3,948	sd. sh. drlg.
Pima Drlg., No. 1 Morganti, Casmalia, Santa Barbara	13- 9-35	1,800	cmtd. 1,549
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	4,076	hd. sh. drlg.
Bell, A. E., No. 4 York, Lompoc, Santa Barbara	33- 8-34	2,750	deepening
Texas Co., No. 134 Shiells, Shiells Canyon, Ventura	4- 3-19	3,814	flow. 139 b.d.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,325	hd. sd. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	1,975	hd. sd. drlg.
Richfield Oil, No. 1 McFarland, Camarillo, Ventura	13- 2-21	7,883	cleaned out
Texas Co., No. 1 Edwards, Camarillo, Ventura	19- 2-21	6,111	will P.B.
Trucano, G., No. 1 Simi, Ventura	5- 2-17	1,001	dry; abd.
Stalling & Senter, No. 1 Timber Canyon, Ventura	24- 4-21	631	O.S. drlg.
Section 20 Oil, No. 1 Sespe, Ventura	20- 5-19	1,561	hd. sh. drlg.
Garmack Oil, No. 1 Orcutt, Sespe, Ventura	28- 5-19	503	br. sh. drlg.
Condor Oil, No. 1 Dorman, Sespe, Ventura	6- 4-19	2,193	idle
Skyline Oil, No. 1-H Hopper Canyon, Ventura	13- 4-19	2,771	sd. sh. drlg.
Commander Oil, No. 6-F Hopper Canyon, Ventura	13- 4-19	2,027	pump. 60 b.d.
Continental Oil, No. 8-A Grubb, S. Miguelito, Ventura	24- 3-24	6,700	O.S. drlg.
C. C. M. Oil, No. 11 Rincon, Ventura	17- 3-24	3,760	flow. 240 b.d.
C. C. M. Oil, No. 20 Rincon, Ventura	8- 3-24	1,922	sd. sh. drlg.
Richfield Oil, No. 1 State, Rincon, Ventura	17- 3-24	4,281	redrlg. 2,580
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	3,173	idle
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	5,691	sd. sh. drlg.
Tide Water A. O., No. 41 V.L.W., Ventura, Ventura	24- 3-23	5,390	sd. sh. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	5,860	sd. sh. drlg.
Tide Water A. O., No. 79 Lloyd, Ventura, Ventura	27- 3-23	4,355	sd. sh. drlg.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	9,330	hd. sd. drlg.
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	8,210	hd. sd. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	9,970	hd. sh. drlg.
Shell Oil, No. 93 Taylor, Ventura Ave., Ventura	30- 3-23	6,477	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	C.P. 9,580-90
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	6,717	D.P. stuck
Rocima Oil, No. 1 Laymance, McKittrick, Kern	20-30-22	3,122	P.B. 1,370
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern	14-27-23	9,310	gr. sh. drlg.
Continental Oil, No. 2 KCL, Wasco, Kern	8-27-24	12,825	sd. sh. drlg.
Chico-Martinez Oil, No. 1 South Belridge, Kern	1-29-20	1,030	O.S. drlg.
Texas Co., No. 2-23 Theta, Lost Hills, Kern	2-26-20	1,090	sd. sh. drlg.
Belridge Oil, No. 27-7 North Belridge, Kern	27-27-20	6,897	br. sd. drlg.
Belridge Oil, No. 27-8 North Belridge, Kern	27-27-20	8,050	br. sh. drlg.
Belridge Oil, No. 27-61 North Belridge, Kern	27-27-20	8,750	flow. 150 b.d
Belridge Oil, No. 28-1 North Belridge, Kern	28-27-20	8,138	O.S. drlg.
Tide Water A. O., No. 7 Reward, No. Belridge, Kern	34-27-20	7,873	br. sh. drlg.
Tide Water A. O., No. 1-21 North Belridge, Kern	21-27-20	7,670	sd. sh. drlg.
Tide Water A. O., No. 2-21 North Belridge, Kern	21-27-20	7,281	br. sh. drlg.
Richfield Oil, No. 1-A North Belridge, Kern	22-27-20	6,198	br. sh. drlg.
Texas Co., No. 2 Martin, North Belridge, Kern	22-27-20	8,030	br. sh. drlg.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	4,965	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	6,897	sd. sh. drlg.
Johnson, G. W., No. 1 Brown, Temblor, Kern	33-29-20	1,015	sd. sh. drlg.
Tampico Pet., No. 5 B. & G., Round Mountain, Kern	17-28-29	1,848	O.S. drlg.
Richfield Oil, No. 1 Olcese, Round Mountain, Kern	17-28-29	1,591	cmtd. fish.
Shell Oil, No. 2 Olcese, Round Mountain, Kern	21-28-29	1,597	pump. 140 b.d.
Coast Expl., No. 1 Coffee, Round Mountain, Kern	6-28-29	250	sd. sh. drlg.
Marcan Oil, No. 3 C.Y., Round Mountain, Kern	12-28-28	2,058	pump. 435 b.d.
California Star Oil, No. 3-80 Kern Front, Kern	22-28-27	2,755	pump. 60 b.d.
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,310	sd. sh. drlg.
Dickey, H. B., No. 1 Kern River, Kern	34-28-28	480	sd. sh. drlg.
Pottenger, F. M., No. 1 Gerrard, Mount Poso, Kern	3-26-28	921	sd. sh. drlg.
Carter, J. P., No. 2 S.P.L., Mount Poso, Kern	3-27-28	1,473	rig. to pump
Golden Bear Oil, No. 3 McVan, Mount Poso, Kern	10-27-27	1,165	sd. sh. drlg.
Pebble Beach Oil, No. 6 Newhope, Mount Poso, Kern	29-27-27	2,653	cleaning out
Bargol Oil, No. 2 Claflin, Mount Poso, Kern	10-27-27	916	sd. sh. drlg.
Ring Oil, No. 2 Jones, Mount Poso, Kern	29-26-28	1,753	O.S. drlg.
Shell Oil, No. 1 Keystone, Deep Well Ranch, Kern	4-26-27	3,748	dry; abd.
Western Gulf Oil, No. 31-B KCL, Fruitvale, Kern	14-29-27	3,031	flow. 249 b.d
Western Gulf Oil, No. 32-B KCL, Fruitvale, Kern	14-29-27	3,034	O.S. drlg.
Cal-West. Oil, No. 1 KCL, Fruitvale, Kern	14-29-27	3,551	sd. sh. drlg.
Texas Co., No. 1 Bastain, Mountain View, Kern	34-30-29	4,294	hd. sh. drlg.
Hogan Pet., No. 5 Symons, Mountain View, Kern	4-31-29	6,172	cleaning out
Petrex, Inc., No. 1 Arvin, Kern	32-31-30	3,140	rebldg. rig
Superior Oil, No. 1 Wagner, Rio Bravo, Kern	35-28-25	9,941	br. sh. drlg.
Superior Oil, No. 2 Wagner, Rio Bravo, Kern	35-28-25	2,865	sd. sh. drlg.
Superior Oil, No. 1 Geissinger, Rio Bravo, Kern	32-28-25	7,991	sd. sh. drlg.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	6,780	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	9,627	sd. sh. drlg.
Getty Oil, No. 1 Ramsey, Rio Bravo, Kern	35-28-25	2,671	sd. sh. drlg.
General Pet., No. 1 Wagner, Rio Bravo, Kern	35-28-25	2,416	sd. sh. drlg.
Shell Oil, No. 58-A KCL, Bellevue, Kern	29-29-27	2,470	sd. sh. drlg.
Continental Oil, No. 1-D KCL, Greeley, Kern	10-30-26	2,960	sd. sh. drlg.
Superior Oil, No. 9 KCL, Greeley, Kern	3-30-26	7,870	redrlg. 3,598
Standard Oil, No. 1 Calder Klassen, Greeley, Kern	20-29-26	6,393	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	2,471	sd. sh. drlg.
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	9,370	sd. sh. drlg.
Standard Oil, No. 11-12 KCL, Greeley, Kern	20-29-26	7,902	redrlg. 5,777
Standard Oil, No. 12-4 KCL, Greeley, Kern	16-29-26	5,996	sd. sh. drlg.
Shell Oil, No. 8-29-A KCL, Ten Section, Kern	29-30-26	1,981	sd. sh. drlg.
Shell Oil, No. 32-29-A KCL, Ten Section, Kern	29-30-26	8,170	flow. 3,048 b.d.
Shell Oil, No. 85-25-B KCL, Ten Section, Kern	25-30-26	8,064	O.S. drlg.
Shell Oil, No. 41-32-B KCL, Ten Section, Kern	32-30-26	5,290	sd. sh. drlg.
Shell Oil, No. 52-31-B KCL, Ten Section, Kern	31-30-26	7,898	sd. sh. drlg.
Shell Oil, No. 72-14-A KCL, Canal, Kern	14-30-25	8,036	redrlg. 7,410
Ohio Oil, No. 4-E KCL, Canal, Kern	13-30-25	8,120	O.S. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	4,170	sd. sh. drlg.
Merritt-Annex Oil, No. 7 Midway-Sunset, Kern	25-12-24	3,420	hd. sd. drlg.
Richfield Oil, No. 1 M.C. Midway-Sunset, Kern	24-31-22	918	sd. sh. drlg.
Iriquois Oil, No. 2 Midway-Sunset, Kern	7-11-23	1,800	pump. 140 b.d.
Chemeketa Oil, No. 1 Midway-Sunset, Kern	15-32-23	2,407	P.B. 2,353
Victor Oil, No. 14 Midway-Sunset, Kern	35-32-23	2,451	O.S. drlg.
National Oil, No. 17 Midway-Sunset, Kern	35-32-23	1,200	br. sh. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	6,781	gr. sd. drlg.
Texas Co., No. 30 Midway-Sunset, Kern	32-32-24	3,245	fish. bailer
Richfield Oil, No. 1-D-A, Elk Hills, Kern	1-31-24	3,025	rig. to pump
Standard Oil, No. 2-14-A Tupman, Elk Hills, Kern	36-30-24	2,995	rig. to pump
Petrol Corp., No. 1 Tejon, Kern	32-11-19	4,984	sd. sh. drlg.
Honolulu Oil, No. 33-1 SP, Tejon, Kern	33-12-19	7,265	sd. sh. drlg.
Universal Consd., No. 1 Tejon, Kern	33-11-19	4,860	gr. sd. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	6,673	sd. sh. drlg.
Pure Oil, No. 1 Cantua, Fresno	31-18-17	10,415	hd. sh. drlg.
Union Oil, No. 1 Nicholson, Cantua, Fresno	17-15-15	7,063	sd. sh. drlg.
West. Gulf. Oil, No. 4 S.P.L. Cantua, Fresno	3-17-15	6,505	gr. sd. drlg.
Superior Oil, No. C.U.P., Fresno	20-16-33	3,415	sd. sh. drlg.
Dauphin Dev., No. 1 Alcade, Fresno	30-21-14	3,651	sd. sh. drlg.
Jacalitos Oil, No. 1 Jacalitos, Fresno	14-21-15	5,870	sd. sh. drlg.
Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno	18-20-16	4,890	sd. sh. drlg.
Grimes, F. C., No. 1 Coalinga, Fresno	12-20-15	548	dry; abd.
Central Valley Oil, No. 1 Joaquin, Fresno	1-12-20	477	gr. sd. drlg.
K. N. D. A., No. 4-18-J Kettleman North, Fresno	18-21-17	10,810	cleaning out

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fag., flahing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	9,052	sd. sh. drlg.
K. N. D. A., No. 72-4-P Kettleman North, Fresno	4-22-17	6,880	br. sh. drlg.
K. N. D. A., No. 38-12-P Kettleman North, Kings	12-22-17	8,080	swabbing
K. N. D. A., No. 6-6-Q Kettleman North, Kings	6-22-18	8,690	P.B. 8,189
K. N. D. A., No. 27-6-Q Kettleman North, Kings	6-22-18	8,190	flow. 500 b.d.
K. N. D. A., No. 6-8-Q Kettleman North, Kings	8-22-18	2,997	sd. sh. drlg.
K. N. D. A., No. 47-18-Q Kettleman North, Kings Co.	18-22-18	1,987	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	9,752	hd. sd. drlg.
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	1,987	sd. sh. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	7,850	rig compres.
Standard Oil, No. 76-1-P Kettleman North, Kings	1-22-17	8,474	hd. sd. drlg.
Standard Oil, No. 87-1-P Kettleman North, Kings	1-22-17	2,570	sd. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	6,871	br. sh. drlg.
Standard Oil, No. 41-7-Q Kettleman North, Kings	7-22-18	5,998	sd. sh. drlg.
Superior Oil, No. 5 Huffman, Kettleman No., Fresno	29-21-17	10,475	redrlg. 10,474
Bandini Pet., No. 5 Whepley, Kettleman No., Fresno	35-21-17	9,282	sd. sh. drlg.
Friend, C. C., No. 1 Tulare Lake, Kings	17-22-19	433	sd. sh. drlg.
Amerada Pet., No. 1 Carano, Los Banos, Merced	19-10-11	8,351	gr. sd. drlg.
Standard Oil, No. 2 Weyl, McDonald Is., San Joaquin	25- 2-4	7,864	gr. sd. drlg.
Standard Oil, No. 1 Morris, Delano, Tulare	36-24-23	11,460	dry; abd.
Wilshire Oil, No. 1 Half Moon Bay, San Mateo	20- 6-5	7,072	sd. sh. drlg.
Amerada Pet., No. 1 McCormick, Rio Vista, Solano	1- 3-2	3,540	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Richfield Oil, No. 1-H El Segundo, Los Angeles	18- 3-14	7,643	P.B. 7,496
Apex Pet., No. 1-C El Segundo, Los Angeles	12- 3-15	7,102	sd. sh. drlg.
Sovereign Oil, No. 1 El Segundo, Los Angeles	12- 3-15	3,361	sd. sh. drlg.
Termo Co., No. 2 El Segundo, Los Angeles	12- 3-15	6,974	sd. sh. drlg.
Ohio Oil, No. 11 Gough, El Segundo, Los Angeles	7- 3-14	6,270	sd. sh. drlg.
Texas Co., No. 6 Security, El Segundo, Los Angeles	18- 3-14	7,315	swabbing
Standard Oil, No. 7 Ref., El Segundo, Los Angeles	13- 3-15	7,330	pump. 470 b.d.
Standard Oil, No. 8 Ref., El Segundo, Los Angeles	13- 3-15	7,092	sd. sh. drlg.
Lakeside Oil, No. 10-1 Elsie, El Segundo, Los Angeles	12- 3-15	7,400	pump. 230 b.d.
Wilshire Oil, No. 1 Const., El Segundo, Los Angeles	12- 3-15	6,757	sd. sh. drlg.
Wilshire Oil, No. 2-1 Elsie, El Segundo, Los Angeles	12- 3-15	7,250	swabbing
Wilshire Oil, No. 2 Sec., El Segundo, Los Angeles	12- 3-15	7,205	flow. 260 b.d.
Union Oil, No. 16-D.R., Playa Del Rey, Los Angeles	28- 2-15	6,099	redrlg. 6,074
Standard Oil, No. 84 LAI Inglewood, Los Angeles	17- 2-14	4,175	P.B. 3,368
Pollock & O'Niel, No. 21 Torrance, Los Angeles	14- 2-14	3,800	will deepen
Patton, C. B., No. 2 Torrance, Los Angeles	14- 4-14	4,098	sd. sh. drlg.
Anderson, N. H., No. 2 Torrance, Los Angeles	14- 4-14	4,297	sd. sh. drlg.
Anderson, N. H., No. 4 Torrance, Los Angeles	14- 4-14	3,780	redrlg. 3,695
Emerald Oil, No. 1 fee, Torrance, Los Angeles	14- 4-14	4,486	sd. sh. drlg.
Camp, C. W., No. 1 Perkins, Torrance, Los Angeles	14- 4-14	3,775	milling
Woolner Oil, No. 5 Torrance, Los Angeles	14- 4-14	4,198	sd. sh. drlg.
Texas Co., No. 5 Wilson, Torrance, Los Angeles	14- 4-14	3,759	will deepen
M. & M. Oil, No. 6-L Torrance, Los Angeles	22- 4-12	3,792	cleaning out
Albertson Oil, No. 1-P Torrance, Los Angeles	16- 4-14	4,776	sd. sh. drlg.
Superior Oil, No. 5 Torrance, Los Angeles	16- 4-14	3,730	will deepen
Grubb, E. H., No. 2 Torrance, Los Angeles	14- 4-14	4,381	sd. sh. drlg.
Fisher, H., No. 1 Watkins, Torrance, Los Angeles	16- 4-14	4,432	sd. sh. drlg.
Fisher, H., No. 1 Washburn, Torrance, Los Angeles	16- 4-14	4,468	sd. sh. drlg.
Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles	27- 4-14	3,770	sd. sh. drlg.
Shell Oil, No. 18 Reyes, Dominguez, Los Angeles	33- 3-13	4,150	swabbing
Shell Oil, No. 93 Reyes, Dominguez, Los Angeles	33- 3-13	7,106	P.B. 6,840
Union Oil, No. 49 Heilman, Dominguez, Los Angeles	33- 3-13	6,826	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	4,520	sd. sh. drlg.
Union Oil, No. 59 Callender, Dominguez, Los Angeles	33- 3-31	3,697	sd. sh. drlg.
Selbar Oil, No. 1 Harris, Dominguez, Los Angeles	33- 3-13	4,388	pump. 118 b.d.
Barnsdall Oil, No. 19 O'Dea, Rosecrans, Los Angeles	18- 3-13	7,600	O.S. drlg.
Union Oil, No. 18-R Rosecrans, Los Angeles	18- 3-13	6,297	sd. sh. drlg.
Texas Co., No. 5-1 Gardena, Los Angeles	30- 3-13	6,994	sd. sh. drlg.
Barnsdall Oil, No. 2-S.F., Newhall, Los Angeles	26- 4-17	6,712	O.S. drlg.
Towsley Canyon Oil, No. 1 Newhall, Los Angeles	8- 3-16	4,105	perforating
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8- 4-17	366	cleaning out
General Pet., No. 2 Blinn, Wilmington, Los Angeles	3- 4-13	2,155	sd. sh. drlg.
General Pet., No. 34 Ford, Wilmington, Los Angeles	4- 5-13	1,998	sd. sh. drlg.
General Pet., No. 37 Ford, Wilmington, Los Angeles	4- 5-13	2,010	sd. sh. drlg.
General Pet., No. 1 Harbor, Wilmington, Los Angeles	3- 5-13	3,939	flow. 2,747 b.d.
General Pet., No. 2 Harbor, Wilmington, Los Angeles	3- 5-13	1,973	sd. sh. drlg.
General Pet., No. 6 Harbor, Wilmington, Los Angeles	2- 5-13	3,890	flow. 2,780 b.d.
General Pet., No. 7 Harbor, Wilmington, Los Angeles	2- 5-13	2,490	sd. sh. drlg.
General Pet., No. 2-S.P. Wilmington, Los Angeles	2- 5-13	4,146	flow. 3,980 b.d.
Allied Pet., No. 24 Wilmington, Los Angeles	32- 4-13	2,177	sd. sh. drlg.
Bankline Oil, No. 2-U.P., Wilmington, Los Angeles	3- 5-13	3,900	flow. 7,330 b.d.
Bankline Oil, No. 4-U.P., Wilmington, Los Angeles	3- 5-13	2,953	sd. sh. drlg.
Bankline Oil, No. 5-U.P., Wilmington, Los Angeles	2- 5-13	2,481	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles	35- 4-13	3,078	cmtd. 3,077
Black Gold, No. 7 Wilmington, Los Angeles	32- 4-13	3,636	O.S. drlg.
Caminol Co., No. 1-6-H Wilmington, Los Angeles	2- 5-13	2,870	sd. sh. drlg.
Colter & McAdoo, No. 4 Wilmington, Los Angeles	32- 4-13	2,646	sd. sh. drlg.
Hancock Oil, No. 1-A Wilmington, Los Angeles	2- 5-13	3,890	O.S. drlg.
Hancock Oil, No. 2-A Wilmington, Los Angeles	2- 5-13	2,540	sd. sh. drlg.
L. B. Harbor Oil, No. 1-CC, Wilmington, Los Angeles	2- 5-13	3,225	O.S. drlg.
Macson Oil, No. 2-C Wilmington, Los Angeles	32- 4-13	3,638	pump. 144 b.d.
Pongratz, Gus., No. 1-A Wilmington, Los Angeles	32- 4-13	3,666	flow. 670 b.d.
Richfield Oil, No. 1-G Wilmington, Los Angeles	2- 5-13	4,057	sd. sh. drlg.
Richfield Oil, No. 1-R.G., Wilmington, Los Angeles	35- 4-13	3,350	pump. 346 b.d.
Richfield Oil, No. 2-P.G., Wilmington, Los Angeles	2- 5-13	3,120	O.S. drlg.
Richfield Oil, No. 1-S.D., Wilmington, Los Angeles	2- 5-13	2,070	sd. sh. drlg.
Superior Oil, No. 1-S.C., Wilmington, Los Angeles	4- 5-13	3,119	flow. 148 b.d.
Superior Oil, No. 1-C Wilmington, Los Angeles	2- 5-13	3,890	flow. 5,161 b.d.
Superior Oil, No. 1-B.B. Wilmington, Los Angeles	4- 5-13	2,181	sd. sh. drlg.
Superior Oil, No. 5-B.B., Wilmington, Los Angeles	4- 5-13	2,097	sd. sh. drlg.
Superior Oil, No. 14-B.B., Wilmington, Los Angeles	4- 5-13	2,267	sd. sh. drlg.
Texas Co., No. 2 Ref., Wilmington, Los Angeles	32- 4-13	3,472	sd. sh. drlg.
Union Pacific, No. 46 Wilmington, Los Angeles	33- 4-13	2,141	sd. sh. drlg.
Union Pacific, No. 49 Wilmington, Los Angeles	34- 4-13	2,960	sd. sh. drlg.
Union Pacific, No. 51 Wilmington, Los Angeles	34- 4-13	2,171	sd. sh. drlg.
Union Pacific, No. 75 Wilmington, Los Angeles	34- 4-13	3,140	sd. sh. drlg.
Union Pacific, No. 78 Wilmington, Los Angeles	3- 5-13	3,620	flow. 4,901 b.d.
Union Pacific, No. 79 Wilmington, Los Angeles	34- 4-13	3,594	flow. 790 b.d.
Union Pacific, No. 1-E Wilmington, Los Angeles	34- 4-13	3,215	flow. 298 b.d.
Union Pacific, No. 2-E Wilmington, Los Angeles	34- 4-13	3,151	flow. 694 b.d.
Wilton Oil, No. 3 Wilmington, Los Angeles	32- 4-13	3,630	flow. 149 b.d.
Texas Co., No. 18 Baldwin, Montebello, Los Angeles	5- 2-11	6,520	flow. 1,250 b.d.
St. Helens Pet., No. 24-M, Montebello, Los Angeles	4- 2-11	1,970	sd. sh. drlg.
Union Oil, No. 4 Flood Control, Los Angeles	13- 4-13	4,314	sd. sh. drlg.
Abrams, John, No 1 Flood Control, Los Angeles	13- 4-13	4,247	P.B. 4,230
Texas Co., No. 5 Bauman, Long Beach, Los Angeles	19- 4-12	4,730	sd. sh. drlg.
Texas Co., No. 4 Gray, Long Beach, Los Angeles	20- 4-12	4,415	sd. sh. drlg.
Powers, E. D., No. 3 Long Beach, Los Angeles	20- 4-12	4,303	sd. sh. drlg.
Shell Oil, No. 1 Hath, Long Beach, Los Angeles	28- 4-12	6,400	gr. sd. drlg.
Shell Oil, No. 15-C Long Beach, Los Angeles	19- 4-12	3,200	sd. sh. drlg.
Richfield Oil, No. 6-M.D., Long Beach, Los Angeles	19- 4-12	3,000	tested wet
Union Oil, No. 100 Santa Fe Springs, Los Angeles	6- 3-11	11,314	cleaning out
Continental Oil, No. 40 Bixby, Seal Beach, Orange	2- 5-12	7,501	redrlg. 6,497
Standard Oil, No. 34-A Huntington, Orange	34- 5-11	4,450	pump. 125 b.d.
W. P. R. Oil, No. 3 Huntington, Orange	35- 5-11	5,961	sd. sh. drlg.
Lido Pet., No. 1 Severns, Huntington, Orange Co.	34- 5-11	3,801	redrlg. 1,040
Pressel & Tull, No. 1 Puente Hills, Orange	30- 2-9	4,600	hd. sh. drlg.
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Union Oil, No. 29 Chapman, Richfield, Orange	29- 3-9	10,496	P.B. 4,678
Standard Oil, No. 2-26 Kraemer, Richfield, Orange	32- 3-9	2,183	sd. sh. drlg.
Oil Income, No. 1 Anderson, Yorba, Orange	22- 3-9	2,182	P.B. 1,765
Hjorth & Mohr, No. 1 Yorba, Orange	22- 3-9	1,340	pump. water
Berco Oil, No. 1 Milhous, Yorba, Orange	22- 3-9	1,750	pump. off
Angelus Oil, No. 1 Jacobs, Yorba, Orange	22- 3-9	1,691	P.B. 1,676
Fairfield, F. E., No. 1 Dutton, Yorba, Orange	22- 3-9	1,662	bailing
Pearl, J., Oil Co., No. 1-D Yorba, Orange	21- 3-9	994	sd. sh. drlg.
Oliver & Owen, No. 1 Moritz, Yorba, Orange	22- 3-9	1,650	pump. 120 b.d.
Beth Pet., No. 1 Pickering, Yorba, Orange	21- 3-9	1,514	sd. sh. drlg.
Selegna Oil, No. 1-A Chino, San Bernardino	12- 3-8	2,550	sd. sh. drlg.

KANSAS

Week Ending February 5 (Descriptions are East unless marked otherwise)

Barber County

Kansas Oil Corp. No. 1 Mease, NE SE SE sec. 27-30-11w. Arb. 4,896-4,910 ft.; D.&A.

Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. Drlg. 600 ft.

Barton County

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Martin & Foraker et al No. 1 Dick Est., NE SW SW sec. 31-19-11w. Rig.

C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; swb. 15 B.O. and 2 B.W. P.D.

Sinclair Prairie Oil Co. No. 1 Oser, NE SE sec. 17-16-11w. Sd. 3,274-78 ft., T.D.; set 5-in. csg. 3,023 ft.

Texas Co. No. 1 Lowry, CNL NW SW sec. 2-17-13w. Drlg. 2,605 ft.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. S.D. 395 ft.

Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3e. S.D. 1,010 ft.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9. S.D. 1,300 ft.

Chautauqua County

Harrison No. 1 Brown, NE SE NE sec. 19-34-10. S.D. 820 ft.

I. W. Siegel No. 1 Temple, SW cor. sec. 31-32-12. S.D. 400 ft.

Clark County

Olson Oil Co. No. 1 Lehman, SE SW sec 20-32-31w. Viola 6,433 ft.; S.S.O. 6,480-81 ft.

Olson Oil Co. et al No. 1 Watkins, SW NW sec. 23-32-21w. Arb. 6,700-60 ft., T.D. 6,857 ft.; set 7-in. 6,798 ft.; R.U. S.T.

Cowley County

Arthur Brewer No. 1 Clark, NE SE NW sec. 6-31-4. Drlg. 1,965 ft.

Dickey Oil Co. No. 1 Kansas G. & E., NE cor. sec. 22-34-3e. Drlg. 3,442 ft.

Tom Palmer No. 1 Neimaller, NE cor. sec. 14-30-4e. Drlg. 1,325 ft.

Trees Oil Co. and Talbott No. 1 McMinn, NE NW sec. 16-31-6. Drlg. 2,045 ft.

Earl Wakefield No. 1 Whitson, SW NE SE sec. 8-32-4e. T.D. 3,294 ft.; P.B. 3,292 ft.; pmpd. 100 B.O. and est. 200 B.W. daily; comp.

Ellis County

Duwe & Farris No. 1 Hadley, SE NE SE sec. 12-11-18w. K.C. 3,045 ft.; T.D. 3,146 ft.; sat.; rng. 7-in.

Hays & Sackrider No. 1 Windholtz, NE cor. sec. 2-13-16w. Drlg. 2,580 ft.

J. J. Muth et al No. 1 Penney, C N½ NE SE sec. 29-14-18w. S.D. 350 ft.

P. G. Reynolds et al No. 1 Karlin, NW cor. sec. 13-12-18w. Sil. 3,674-82 ft.; pot. 917 B.O.; comp.

Ellsworth County

Cities Service Oil Co. et al No. 1 Schroeder, C N½ N½ NW sec. 29-17-9w. Arb. 3,205 ft. (cor.); T.D. 3,215 ft.; pot. 1,321 B.O.

Colonial Oil Co. No. 1 Hogy, NW cor. sec. 16-16-10w. Drlg. 3,150 ft.

Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. Drlg. 2,775 ft.

Greenwood County

John Nichols et al No. 1 Central Life, SE SW sec. 35-25-12. Spd. and S.D.

Harper County

Franklin Drlg. Co. No. 1 Walts, NE SW sec. 24-34-6w. Drlg. 2,632 ft.

Harvey County

National Ref. Co. No. 1 Brown Bros., NW SE NE sec. 22-23-2w. S.D. 3,030 ft.

Jackson County

Lemmick Oil Co. No. 1 Marble Savings Bank, NE cor. sec. 26-8-14. Spd. and S.D.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. Spd. and S.D.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. K.C. L. 4,075 ft.; drlg. 4,508 ft.

McPherson County

Archer & Crane No. 1 Templin, NW SW SE sec. 32-17-3w. C.O. 2,582 ft.

Carter Oil Co. No. 1 Hoglund, C W½ SW NW sec. 8-17-3w. Arb. 3,542-69 ft.; P.B. 3,373 ft.; pot. 345 B.O. and est. 50 B.W.; comp.

Meade County

Pacific Mid-West Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. S.D. 200 ft.; (cor.).

Ness County

Marshall Drlg. Co. et al No. 1 Anderson SW NW sec. 23-16-24w. Spd. and S.D

Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.

Trojan O. & G. Co. No. 1 Page Milling Co SE SE NW sec. 36-18-26w. C.O. 3,265 ft.

Phillips County

C. W. Davidson et al No. 1 Elliff, SE NE NE sec. 35-5-18w. S.D. 600 ft.

Reno County

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Drlg. 3,310 ft.

McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. Set 10-in. 1,955 ft.; C.O.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. Old T.D. 3,440 ft.; drlg. 3,630 ft.

Skelly Oil Co., Kimmel & Stewart No. 1 Gorham, SW SE sec. 32-25-10w. Drlg. 3,992 ft.

Rice County

Herndon Drlg. Co. et al No. 1 Froning, NW cor. sec. 15-18-8w. Drlg. 2,800 ft.

Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. Arb. 3,297 ft.; pay 3,304-06 ft.; 1,000 ft. O.I.H.

Skiles et al No. 1 Campbell, SE NE sec. 28-19-9w. T.D. 3,208 ft. (cor.); pmpd. 152 B.O. in 20 hrs.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w Chat 3,346-55 ft.; R.U.

Rooks County

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,339 ft.; 2,000 ft. O.I.H.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. Set 12-in. 312 ft. (cor.); S.D. 330 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Sil. 3,492-95 ft.; 1,500 ft. sulfur water in hole in 2½ hrs.; T.D. 3,512 ft.; S.D.O.

Russell County

Emrichs et al No. 1 Anderson, NE SE SW sec. 33-15-11w. Spd. and S.D.

Hess et al No. 1 Reinhardt, NE SW sec. 36-12-14w. Drlg. 1,740 ft.

Parks et al No. 1 Gorham Est., SW NW sec. 19-15-15w. Spd.

Winkler & Koch No. 1 Jones, SE SE NW sec. 22-14-13w. Sil. 3,180 ft.; S.D.O.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Fsg. 1,550 ft.

McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. Drlg. 1,400 ft.

I. W. Murfin et al No. 1 Martin, SE NW sec. 32-28-1e. T.D. 3,491 ft.; acd.; swb. 45 B.O. in 24 hrs.

Steinbuchel et al No. 1 McAdams, SW NE sec. 28-20-1e. Drlg. 3,155 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. T.D. 2,400 ft.; S.D.

Stafford County

C. L. Carlock et al No. 1 Gates, SE SW NE sec. 34-22-11w. Drlg. 564 ft.

Carter Oil Co. No. 1 Andress, CNL SE sec. 2-21-13w. Drlg. 3,498 ft.

Cardinal Oil Co. et al No. 1 Sittner, SW cor. sec. 4-22-12w. T.D. 3,700 ft.; swb. 8 B.O. and 12 B.W. in 4 hrs.

Hipple et al No. 1 Moses, NW SW sec. 9-22-13w. H.F.W. 3,804-07 ft.; P.B. 3,635 ft.; perf. csg.; shot.

National Ref. Co. No. 1 Bonham, SW SE sec. 28-25-12w. Set 12-in. csg. 315 ft.; W.O.C.

Fred Rust No. 1 Hullman, SW cor. sec. 5-22-12w. Drlg. 3,200 ft.

J. C. Shaffer et al No. 1 Newell, NE SE sec. 20-24-11w. Drlg. 3,945 ft.

Torry & Feaster et al No. 1 Heggy, NE SW sec. 26-23-11w. C.O. 3,858 ft.

Sumner County

Cities Service Oil Co. No. 1 McCoy, SE SW sec. 11-35-2e. Drlg. 3,690 ft.
Saco Oil Co. No. 1 Phipps, SW SE NE sec. 24-30-1w. Spd. and S.D.
E. B. Shawver No. 1 Stewart, NW SE sec. 4-32-3w. Drlg. 2,610 ft.

Trego County

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.

NEBRASKA WILDCATS

Arab Pet. Corp. et al No. 1 Ogle, SE SE sec. 9-1n-14e. Viola 3,019 ft.; Granite sec. 9-1n-14e, Richardson County. Viola 3,019 ft.; Gran. 3,423 ft., T.D.; S.D.O.

OKLAHOMA

Week Ending February 5

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,645 ft.

Caddo County

Indian Terr. Illum. Oil Co. No. 1 Dome-Bo, C NE SE sec. 29-6-10w. T.D. 6,900 ft.; perf. csg.; to make squeeze job.

Cleveland County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Rlg.
Harper-Turner No. 1 Pollock, C W½ NW NW sec. 13-9-2w. T.D. 7,489 ft.; P.B. 6,620 ft.; drlg. by tools.

Comanche County

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. S.D. 340 ft.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Second Wilcox 7,298 ft.; T.D. 7,336 ft.; to test Marshall zone at 7,260-80 ft.

Garvin County

B. C. D. Edwards No. 3 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; P.B. 2,088 ft.; perf.; swb. 6 bbls. fluid in 1 hr.; est. half wtr.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drlg.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. 10,265 ft.

Grant County

Magnolia Pet. Co. No. 1 Reynolds, NE NE SE sec. 19-25-5w. T.D. 6,236 ft.; nothing showing.

Greer County

R. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. T.D. 820 ft.; U.R. csg.
J. I. Medlin et al No. 1 Broudle, NW cor. sec. 5-6n-20w. T.D. 90 ft.; (cor.); S.D.

Hughes County

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. Fsg. 290 ft.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. Drlg. 6,241 ft.

Kay County

F. S. Freeland et al No. 1-A Watson, NE NW NW sec. 28-28-1w. Rig on ground.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. Drlg. 623 ft.
Hughes & Reese No. 1 Fultz, SE cor. sec. 10-6-18w. T.D. 1,238 ft.; fsg.

Logan County

Arrow Drlg. Co. No. 1 Dodson, NW cor. sec. 23-17-1w. Drlg. 3,395 ft.
Stanolind O. & G. Co. No. 1 Blunt B, C W½ W½ NW sec. 6-14-3w. Cg. 6,360 ft.

Major County

Ed V. Parsons et al No. 1 Patzkowsky, C NW sec. 10-20-11w. Abd. rig.

Okfuskee County

Broswood Oil Co. No. 1 Lehman, NW SW NW sec. 21-13-10. Drlg. below 2,445 ft.
Mid-Continent Pet. Corp. No. 1 Inland, SW NE SW sec. 10-13-10. Wilcox 3,420 ft.; T.D. 3,431 ft.; swb. 125 bbls. in 24 hrs.

Oklahoma County

W. O. Allen et al No. 1 Jackson, C E½ SE NW sec. 6-14-3w. Drlg. 5,290 ft.

Okmulgee County

Phillips Pet. Co. No. 1 Wood, NW SW SW sec. 31-11-13. T.D. 3,283 ft.; blg. wtr.

Osage County

Norbla Oil Co. and Carter Oil Co. No. 1 Osage, NW cor. sec. 3-24-6. Spd.

Pontotoc County

H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Drlg. 465 ft.
Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. Spd.
H. Riddle et al No. 1 fee, NW SW SE sec. 11-3n-5e. Drlg. 4,261 ft.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. S.D. 3,320 ft.

Seminole County

H. V. Woodson and Marydun Oil Co. No 1 Gilliland, SE SW sec. 24-11-7. T.D. 4,293 ft.; rng. 5-in. csg.

Texas County

Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. T.D. 2,842 ft.; set 7-in. csg. 2,766 ft.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 2,004 ft.

SOUTHERN OKLAHOMA

Atoka County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. Drlg. 1,400 ft.
C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. U.R. 2,215 ft.

Bryan County

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. Drlg. 2,605 ft.

Choctaw County

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. T.D. 340 ft.; fsg.
J. A. True No. 1 Boby, C NW SW sec. 17-7s-19e. T.D. 2,044 ft.; S.D.O.

Coal County

Carter Oil Co. No. 1 Claytor, C W½ NE SW sec. 27-2n-9e. T.D. 6,722 ft.; P.B. 6,480 ft.; pmpd. 165 B.O.P.D.; comp.

Cotton County

Bowers & Wise No. 1 Pendergraft, NW SE SW sec. 4-4s-12w. Spd. 16 ft.; S.D.

Jefferson County

Massad & Swansberger No. 1 Barrett, NE SE SE sec. 14-6s-6w. T.D. 1,890 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummins, C SW SW NE sec. 16-1s-6e. S.D. 1,380 ft.
W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. Drlg. 2,820 ft.

Marshall County

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. O.W.D.D.; C.O. to 720 ft.; S.D.

Murray County

Sinclair Prairie Oil Co. No. 1 Lancaster Trust, C SW NE sec. 10-1-2e. T.D. 4,404 ft.; freeing stuck pipe.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. 9,164 ft.; drlg. in new hole 9,035 ft.
Helmerich & Payne No. 1 Pfile, SW cor. sec. 1-2s-7w. T.D. 4,246 ft.; set 5½-in. csg. 3,973 ft.
Robinson et al No. 1 Sadler, SW NW NE SW sec. 30-2n-5w. Drlg. 100 ft.

Tillman County

H. I. Grimes et al No. 1 Laney, NW cor. sec. 3-3s-18w. Bldg.
Indian Terr. Illum. Oil Co. No. 1 Drum, C N½ SW NW sec. 32-2s-17w. T.D. 3,841 ft.; S.D.O.
M. G. Martin No. 1 Parris, NW NW SW sec. 3-3s-19w. T.D. 2,135 ft.; fsg.
Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 1,581 ft.; S.D.

ARKANSAS

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. D.S. stuck 7,659 ft.
Standard Oil Co. of La. No. 1 Bodcaw-Barbara, NE cor. SE NW sec. 18-16-22. Set 9⅝-in. csg. 2,965 ft., T.D.; L. 2,972 ft.
Standard Oil Co. of La. No. 1 S. T. Crone, NW cor. NW SE sec. 8-16-22. R.U.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. Drlg. 4,185 ft.

LaFayette County

Lillian Taubel et al No. 1 Tatum, NE cor. SE NW sec. 18-16-22. Drlg. 4,755 ft.

Little River County

Heenan & Coe No. 1 Waldrop, SE NW sec. 21-12-28. S.D. 1,960 ft.
Joe G. Strahan et al No. 2 Dierks Lbr. Co. S.D. 1,985 ft.

Miller County—Rodessa

G. C. Grasty No. 1 Mitchell, NW sec. 11-20-28. R.U.
Gulf Oil Corp. No. 1 Hanner, SE cor. sec. 16-20-24. Drlg. 2,365 ft.
R. Lacy No. 2 Grogan, E½ W½ sec. 15-20-28. S.D. 2,028 ft.
W. M. Layton No. 1 McKellar, SE cor. W½ W½ sec. 15-20-28. R.U.
R. H. Long No. 3 Greer, NE SE sec. 10-20-28. Set 9⅝-in. csg. 2,030 ft.; drlg. 4,280 ft.
R. H. Long No. 4 Greer, sec. 10-20-28. Drlg. 5,945 ft.
McClanahan & Feazel No. 2 Eason, C N½ NW SW sec. 12-20-28. R.U. & S.D.
R. W. Newell No. 1 Thomas, NW SE sec. 12-20-28. Set 5½-in. csg. 6,130 ft.; T.D. 6,144 ft.; perf. 6,096-6,106 ft.; swbg.
Nivla Oil Corp. No. 1 Cross, SE cor. SE NE sec. 11-20-28. T.D. 6,106 ft.; set 7-in. csg. 6,104 ft.; perf. 6,040-95 ft.; acid.; W.O.S.R.
Skelly Oil Co. No. 2 Thomas, NE cor. E½ SW sec. 12-20-28. Perf. 5,850-66 ft.; 47 shots; to acidize; T.D. 6,140 ft.; 7-in. csg. 6,016 ft.; comp.; 7 B.P.H.; 19/64-in. ck.; T.D. 6,140 ft.
Texas Canadian Oil Corp. No. 3 Thomas, NE cor. NW SE sec. 12-20-28. Set 13⅜-in. csg. 160 ft.
Thompson & Jaffra No. 1-A Treadway, NW cor. SE SE NE sec. 10-20-28. Drlg. 3,320 ft.
Sam Tillingsworth No. 1 Treadway, SW cor. SE SE NE sec. 10-20-28. Drlg. 3,711 ft.

Nevada County

Bruce E. Wallace No. 2 Haynie, SE cor. sec. 5-14-21. S.D. fuel 1,060 ft.

Ouachita County

Copenhaven Oil Corp. No. 1 Evans, NE cor. NE SW sec. 20-11-19. S.D. 1,825 ft.
A. H. Tarver et al No. 1 Dean Est., NW SE sec. 16-14-19. 7-in. csg. 1,305 ft.; T.D. 1,340 ft.; P.B. 1,304 ft.; drld. to 1,320 ft.; tstd. S.W. 1,320 ft.; D.&A.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman Jr., SE SE SW sec. 2-1s-13e. Drlg. hd. bl. slate 2,080 ft.

Union County—Shuler

Alice Sydney Oil Co. No. 3 Morgan, NW NE SE sec. 18-18-17. T.D. 7,717 ft.; set 7-in. csg. 7,629 ft.
Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE sec. O.W.W.O.; old T.D. 6,005 ft.; prep. deepen.
Ark. Southern Oil Corp. No. 2-A Simmons, SW cor. NE NW sec. 15-18-13. T.D. 2,307 ft.; O.I.H.; W.O. pmp.
E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Drlg.
E. M. Jones et al No. 1-A Murphy Ld. Co. Drlg. 6,837 ft.
Lion Oil Ref. Co. No. 2 Marine Oil Co., SW cor. E½ SE¼ sec. 17-18-17. Drlg. 2,330 ft.
Lion Oil Ref. Co. No. 1 Mayfield, SE cor. Lot 3, Fract. NW¼ sec. 18-18-17. R.U.
Lion Oil Ref. Co. No. 1 Miller, SW cor. NE NW sec. 18-18-17. T.D. 2,350 ft.; set 10¾-in. at 2,310 ft.
Lion Oil Ref. Co. No. 4-A Edna Morgan, NW cor. Lot 1, SW sec. 18-18-17. Drlg. 3,640 ft.
Lion Oil Ref. Co. No. 5-B Morgan, SE cor. W½ SE sec. 18-18-17. Drlg. 5,235 ft.
Lion Oil Ref. Co. No. 4-B Edna Morgan, NW SW SE sec. 18-18-17. Set 7-in. csg. 7,638 ft.; T.D. 7,639 ft.
Marine Oil Co. No. 3 fee, SW sec. 17-18-17. Jones sd. 7,533-70 ft.; set csg. 7,579 ft.; drlg. plug; T.D. 7,590 ft.
Marine Oil Co. No. 4 fee, NW cor. SW SW sec. 17-18-17. Drlg. 3,550 ft.
Marine Oil Co. No. 3 Justiss, NE cor Lot 7, NW sec. 18-18-17. Set 10-in. csg. 1,705 ft.; W.O.C.
Marine Oil Co. No. 4 Justiss, cen. Lot 7, NW sec. 18-18-17. Drlg. 5,897 ft.
Phillips Pet. Co. No. 1 First Natl. Bk., NE SW sec. 17-18-17. Drlg. 7,485 ft.
Phillips Pet. Co. No. 2 Justiss, NW sec. 18-18-17. Set 7-in. csg. 7,700 ft.; perf. and killed to reperf.; T.D. 7,700 ft.
Phillips Pet. Co. No. 1 Marine Oil Co., NE cor. NW NE sec. 20-18-17. Set 10¾-in. csg. 2,249 ft.
Phillips Pet. Co. No. 2 Marks, SW sec. 18-18-17. T.D. 7,770 ft.; set 7-in. csg. 7,681 ft.; perf. 7,516-50 ft.; shut in to reperf.
Phillips Pet. Co. No. 2 Rosen, SE cor. SW NE sec. 18-18-17. Drlg. 4,336 ft.
Texas Canadian Oil Corp. No. 1 Powledge, C NE NW NW sec. 21-18-17. Drlg. 100 ft.

Union County—Other

Penn-Ark. Pet. Corp. No. 1 Raulston, sec. 12-17-14. T.D. 3,175 ft.; S.D.; litigation.
W. D. Wingfield, Tr., No. 1 Kidd Est., C NE NW SE sec. 15-18-13. Set 7-in. csg. 2,263 ft.; T.D. 2,322 ft.; sd. 2,310-22 ft.; 300 ft. O.I.H.; W.O. pmp.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

F. W. Burford No. 1 Brown, NE cor. SE sec. 5-23-16. Drlg. sh.&L. 3,745 ft.
F. W. Burford No. 3 Terry, sec. 2-23-16. Set 7-in. csg. 5,983 ft.; T.D. 6,025 ft.; comp.; 14 B.P.H.; ½-in. ck.
Clark Oil Corp. No. 1-C Sharp, sec. 4-23-16. Set 7-in. csg. 5,965 ft.; T.D. 6,045 ft.; hole full oil; S.I.; W.O.
J. S. Rushing No. 1 Alexander, NW cor. sec. 3-23-16. Drlg. 3,699 ft.
Standard Oil Co. of La. No. 1 Rodessa Oil & Ld. Co., NE cor. NE NE sec. 10-23-16. Drlg. 2,130 ft.
Standard Oil Co. of La. No. 1 Spearman, NE SE sec. 3-23-16. Mitchell sd. 5,933-43 ft.; T.D. 5,987 ft.; comp.; 745 B.P.D.; ½-in. ck.; 7-in. csg. 5,930 ft.
Standard Oil Co. of La. No. 2 Spearman, SE cor. SE SE sec. 3-23-16. Loc.
Union Prod. Co. No. 6 Harris, sec. 10-23-16. Set 7-in. csg. 5,887 ft.; T.D. 5,940 ft.
Union Prod. Co. No. 7 Harris, NW cor. NE sec. 10-23-16. Drlg. L. 3,560 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Cg. sh.&sd. 7,575 ft.

Bossier Parish

L. W. Dennis No. 1 Roos, SW NW NW sec. 13-19-12. Perf. 840-42 ft.; tstd. S.W.; recmtd. 8¼-in. 855 ft.; T.D. 864 ft.
C. H. French No. 2 Larkin, NW cor. SE sec. 14-19-11. Drlg. 100 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Drlg. sh. 1,392 ft.; 8¼-in. 1,368 ft.
Triangle Drlg. Co. No. 2-A Herold, NW cor. sec. 13-17-12. Drlg. L.&sh. 2,570 ft.

Caddo Parish

Anderson & Gilbert No. 1 Pittman, SE cor. SW sec. 14-19-14. Drlg. 325 ft.
W. D. Chew No. 4 Spell, SE sec. 29-21-15. S.D. 1,517 ft.; high wtr.
L. T. Davis No. 3 Styles, SE cor. sec. 17-21-16. Drlg. 320 ft.
Double "I" Oil Co. No. 1 Goodwin, NW cor. sec. 33-21-15. Set 6-in. csg. 1,410 ft.; W.O.S.R.; T.D. 1,630 ft.
J. P. Driscoll et al No. 2 Muslow, SE cor. NE NW sec. 4-20-15. S.D. 1,700 ft.; high wtr.
W. D. Flynn No. 3 Natalie, SW cor. sec. 10-21-16. T.D. 1,029 ft.; W.O.S.R.
W. H. Harrison, Jr., No. 3 Crystal Shoreline, SW cor. SW NW sec. 25-21-16. Cg. 1,900 ft.
Louisiana Oil Prod. Co. No. 14-B Muslow, sec. 4-20-15. S.D. 2,130 ft.; high wtr.
Magnolia Pet. Co. No. 23 Dillon Hrs., NW cor. NE NE sec. 23-21-15. Drlg.
J. F. Mitchell No. 1 Muslow, NE cor. sec. 31-21-15. Set 6-in. csg. 1,360 ft.
Olson Drlg. Co. No. 1 Sharp, C NW NE sec. 10-18-16. Set 10-in. csg. 388 ft.
Patterson & O'Mara No. 1 Player, 330 ft. S and E, C sec. 26-21-15. Cg. 2,224 ft.
Petroleum Heat & Power Co. No. 1

William M. Barret, Inc.

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GIDDENS-LANE BUILDING -:- SHREVEPORT, LA.

Wemple, NW cor. sec. 14-20-15. Drlg. 540 ft.
A. D. Robinson No. 1 Wilkinson, sec. 22-20-14. Rng. elec. log 2,805 ft.
J. E. Sedberry No. 1 Dickinson, NW sec. 15-19-14. Set 6-in. csg. 2,443 ft.; W.O. S.R. 2,505 ft.
Raymond Wright No. 1 Hobbs, NE cor. sec. 29-21-15. Set 4½-in. csg. 1,444 ft.

Caldwell Parish

G. W. Ziegen No. 12 La. Cen. Lbr. Co., sec. 20-14-3e. Set 12-in. csg. at 82 ft.

Claiborne Parish

Atlantic Ref. Co. No. 2-B Bean, C S½ NW NE sec. 1-5-3S. Comp.; 52 B.P.H.; ¾-in. ck.; 5½-in csg. 5,172 ft.; T.D. 5,206 ft.
Atlantic Ref. Co. No. 2-D Patton, C S½ SE SE sec. 29-21-4. Drlg. sh. 4,422 ft.
T. L. James No. 2 Fowler, NE SW sec. 32-21-4. Drlg. sh. 4,319 ft.
J. R. McMurray No. 1 Bean, C N½ SE NW sec. 32-21-4. Drlg. sh. 3,860 ft.
A. O. Olson et al No. 2 English, NE SE sec. 29-21-4. Drlg. sh.&L. 4,973 ft.
A. O. Olson et al No. 7-A Patton, sec. 30-21-4. Set 10¾-in. csg. 817 ft.
C. R. Schuster No. 1 S. Lloyd. SW SW sec. 2-20-5. T.D. 5,271 ft.; set 5½-in. csg.; comp.; 7 B.P.H.; 10/64-in. ck.
Sloan & Zook No. 6 Patton Est., C W½ NE SW sec. 1-20-5. Comp. 12 B.P.H.; open tbg.; 5½-in. csg. 5,345 ft.
A. O. Olson et al No. 7-A Patton, sec. 30-21-4. Set 10¾-in. csg. 817 ft.
Tippett Oil Corp. No. 1 Aycock, SE sec. 1-20-5. Drlg. 3,801 ft.
Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. O.W.D.D.; cg. 9,823 ft.; bl. sh.
Union Prod. Co. No. 1-A Kilpatrick, sec. 11-19-6. Drlg. 5,361 ft.
G. H. Vaughn No. 3 Eppinger, C S½ NW SW sec. 29-21-4. Sat. L. 5,110-19 ft.; 5½-in. csg. 5,110 ft.; T.D. 5,125 ft.

De Soto Parish

A. P. Barrett No. 1 Jal Drlg. Co., NW cor. SE SW sec. 7-11-11. Set 6⅝-in. csg. 2,777 ft.; T.D. 2,809 ft.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. S.D. 1,950 ft.; repairs.
Pet. Heat & Power Co. No. 1 Jal Drlg. Co., SW cor. SE NW sec. 7-11-11. Drlg. sh. 2,202 ft.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Drlg. sh. 1,150 ft.
Pet. Heat & Power Co. No. 2 Matthews, sec. 30-12-11. Drlg. 850 ft.
Pet. Heat & Power Co. No. 1 Taylor, NE cor. NE SE sec. 12-11-12. Drlg. 3,000 ft.
Pet. Heat & Power Co. No. 2 Taylor, sec. 12-11-12. Drlg.
Pet. Heat & Power No. 1 Williams Est., NE cor. SW SE sec. 12-11-12. Drlg. sh. 650 ft.
Pet. Heat & Power No. 1 Williams, W. R., NW NE sec. 13-11-12. R.U.

Franklin Parish

Southern Star Pet. Co. No. 2 Grayson, NE cor. NE SE sec. 36-12-6e. Drlg. sd.&shil. 865 ft.

La Salle Parish

Pet. Heat & Power Co. No. 1 Gaharan, Lot 7, Blk. 1, Holmes & Adams Addn., sec. 25-10-1e. Set 10-in. csg. 60 ft.; setting csg. 1,541 ft.
Stovall, Tr., No. 4 Russell, SE SE sec. 25-10-1e. 6-in. csg. at T.D. 1,518 ft.; W.O.S.R.
T. & J., Inc., No. 2 Tullos, SE NE sec. 26-10-1e. Comp.; 5 B.P.D.; pmpg.; T.D. 1,523 ft.

Lincoln Parish

F. H. Brown No. 2 Patton, C S½ SE SW sec. 6-20-4. R.U.
Delta Drlg. Co. No. 1 Weiss & Tatum, C S½ NW NE sec. 7-20-4. Drlg. sh.& L. 4,524 ft.
Gigantic Oil Co. No. 1 Sanderson, NW SE NW sec. 30-18-1w. T.D. 179 ft.; abd.
Love Bros. No. 2 Patton Est., sec. 6-20-4. Drlg. 4,145 ft.
Lyon & Neely No. 1-B Patton, SE SE sec. 6-20-4. Sat. L. 5,278-83 ft. and 5,-290-95 ft.; 5½-in. csg. 5,276 ft.; tstg.
Magnolia Pet. Co. No. 1 Pollack, C N½ NE SE sec. 6-20-4. Drlg. 4,750 ft.
E. T. Oakes & Easton No. 1 Griggs, sec. 36-18-1w. Set 5½-in. csg. 6,259 ft.; Schlumberger survey showed sat. 6,-231-40 ft.; set 5½-in. at 6,121 ft.; perf. 5,931-40 ft.; 48 shots; swbd. dry; trtd. with 2,000 gal. acd.; reacd. 5,000 gal.; S.G.; shot with nitro; shut in.

Morehouse Parish

W. J. Furlong No. 1 Clark, sec. 10-20-7e. T.D. 6,025 ft.; S.D.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., NW sec. 36-7n-9w. R.U.
Roy Raines No. 1 Allen, NW NE SW sec. 22-10-9w. T.D. 70 ft.; abd.

Red River Parish

Arkansas Fuel Co. No. 1 Frankland Realty Co., NW sec. 20-11-9. Tstd. S.W.; T.D. 7,155 ft.; D.&A.
Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. Drlg. 1,710 ft.
Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. Setting csg. 2,454 ft.; T.D. 2,462 ft.

Sabine Parish

Hunter Co. No. 2 Bowman, C SW NE sec. 12-7-13. Drlg. 1,250 ft.
Major Oil Co. No. 1 Graham, NW cor. sec. 20-9-13. Drlg. 1,552 ft.
W. L. Posey No. 1 Hale, C NE NW sec. 12-7-13. Comp.; 35 B.P.D. and 1,000,-000 ft. gas; 6-in. csg. 2,130 ft.; T.D. 2,135 ft.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. Set 9⅝-in. csg. 2,215 ft.

Tensas Parish

H. M. Jones No. 2 Chicago Mill & Ld. Co., NE NW sec. 31-12-10e. Cg. sh. 779 ft.

Union Parish

Joe Modisett No. 1 Frost Lbr., sec. 14-21-1e. T.D. 7,005 ft.; M.I. heavy rig.

Webster Parish

S. W. L. Backus No. 4 Pardee Co., NE sec. 3-22-11. R.U.
H. L. Hunt Oil Co. No. 1 Hope, C SW NW sec. 24-21-10. Cg. sd.&sh. 5,680 ft.
C. E. Lunsford No. 1 Turner, SW cor. SE sec. 20-20-8. S.D. 1,805 ft.
Magnolia Pet. Co. No. 2 Mixon, sec. 22-21-10. Drlg. sd. 7,680 ft.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Set 9⅝-in. protective csg. 6,838 ft.
North American Oil Co. and Root Pet. Co. No. 1 Coyle, NE SW sec. 28-21-10. Drlg. 7,797 ft.
North American Oil Consol. Co. No. 1 Stewart, C SE NE sec. 32-27-10. Drlg. L.&sh. 5,562 ft.
Ohio Oil Co. No. 2 Bodcaw Acct. 4, SW SE NW sec. 24-21-10. Drlg. 7,848 ft.
Ohio Oil Co. No. 48 Bodcaw Acct. 2, SE sec. 15-21-10. Drlg. sh. 7,959 ft.
Ohio Oil Co. No. 49 Bodcaw (Acct. 3), C NW NW sec 34-21-10. R.U.
Ohio Oil Co. No. 1 Crutsinger, NE cor. sec. 35-21-10. R.U.
Ohio Oil Co. No. 23 Gray Acct. No. 1, SE sec. 27-21-10. Drlg. 7,441 ft.
Ohio Oil Co. No. 2 Warren Cox, SE sec. 23-21-10. Set 7-in. csg. 8,070 ft.; T.D. 8,110 ft.; comp.; 441 B.P.D. dist. and 5,000,000 ft. gas; ⅜-in. ck.
A. G. Oliphant No. 2 Banks, C SE NW sec. 34-21-10. Drlg. 5,761 ft.
A. G. Oliphant No. 1 Central Inv. Co., C NW SE sec. 33-21-10. Drlg. 2,451 ft.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Drlg. 2,531 ft.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. Drlg. 5,210 ft.
Union Prod. Co. No. 4 Stewart, SE cor. SE sec. 28-21-10. Drlg. sh. 4,934 ft.

Winn Parish

G. W. Ziegen No. 13 La. Cen. Lbr. Co., sec. 4-13-1e. In at 62 ft.; W.O.C.

SOUTH LOUISIANA FIELDS

Anse La Butte—St. Martin Parish

Crusader Oil Co. No. 2 Central Oil Co., sec. 86-9s-5e. Drlg. sh. 590 ft.
Austin B. Taglar No. 4 Begnaud, sec. 113-9s-5e. T.D. 1,970 ft.; 7-in. csg. 1,-916 ft.; perf. csg. 1,693-98 ft.; showed dry gas; reperfd. 1,328-43 ft.; swbd. drv; S.D.
Austin B. Taylor No. 5 Begnaud, sec. 117-9s-5e. T.D. 836 ft.; 7-in. csg. 826 ft.; deepened 848 ft.; tstd. S.W.; S.D.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 1 Schwing, sec. 67-9s-11e. Top sd. show oil 6,827 ft.; T.D. 6,837 ft.; 7-in. csg. 6,828 ft.; tstg.

Bayou Cocotrix—Terrebonne Parish

Shell Pet. Corp. No. 4-B Realty Operators, sec. 17-17s-15e. R.U.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 St. Charles Ld. Co., sec. 38-15s-20e. 10¾-in. csg. 2,698 ft.; top salt 9,255 ft.; T.D. 9,263 ft.; 7-in. csg. 7,200 ft.; Schlumberger shwd. 7¾ ohms, 130 millivolts; P.B. 6,940 ft.; perf. csg. 6,928-31 ft.; D.S.T. showed S.W.; slight gas show; squeezed off perf.; set retainer at 6,886 ft.; drld. out to 6,940 ft.; perf. csg. 6,909-20 ft.; tstd. S.W.; set retainer 6,898 ft.; sqzd. off perf.; prep. to perf. 6,894-97 ft.

Big Lake—Cameron Parish

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. Drlg. sh. 6,400 ft.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 40 Watkins. Drlg. sh. 3,541 ft.

Bosco—Acadia Parish

Superior Oil Co.-Pure Oil Co. No. 5 Larcade, sec. 35-8s-3e. T.D. 10,216 ft.; P.B sdtrkd.: T.D. 9,927 ft.; 9⅝-in. csg. 7,536 ft.; T.D. 10,326 ft.; P.B. 9,423 ft.; drlg. sh. 10,148 ft.

Edgerly—Calcasieu Parish

La. Crusader Oil Co. No. 1 La. Prairie, sec. 21-9s-11w. T.D. 5,108 ft.; S.D.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 21 Sch. Ld., sec. 16-14s-13w. T.D. 4,271 ft.; 7-in. csg. 4,247 ft.
Burton-Sutton Oil Co. No. 22 Sch. Ld., sec. 16-14s-13w. R.U.

Chenoyville—Rapides Parish

Amerada Pet. Corp. No. 4 Weil, sec. 53-1s-2e. Cg. sh. 6,090 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 1 Eucer sec. 11-13s-9e. T.D. 10,317 ft.; D.S. stuck; fsg.
Pan American Prod. Co. No. 1 Robichauv, sec. 11-13s-9e. T.D. 1,906 ft.; 7-in. csg. 1,848 ft.; drld. out to 1,967 ft.; P.B. 890 ft.; W.O.C.

Choctaw—Iberville Parish

Louisiana Crusader Oil Co. No. 1 E. B. Schwing, sec. 29-8s-11e. T.D. 8,969 ft.; well tried to blow out; killing gas pressure.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. T.D. 6,019 ft.; cmtg. surf. csg.

Darrow—Ascension Parish

Kiva Oil Co. No. 1 Dunlessis, sec. 69-10s-2w. T.D. 60 ft.; S.D.
Humble O. & R. Co. No. 2 Landry, sec. 34-10s-2e. Drlg. sh. 6,426 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e T.D. 6,798 ft.; sd.&sh.; oil odor; rmg.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e. 18⅝-in. csg. 90 ft.; drlg. sh. 7,234 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk. T.D. 6,943 ft.; 9⅝-in. csg. 6,870 ft.; drlg. sdy. sh. 7,342 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 26 state, sec. 37-23s-33e. Drlg. sh. 942 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 2 Mary McIvor, sec. 14-9s-8w. T.D. 7,165 ft.; 5-in. csg. 7,165 ft.; P.B. 7,137 ft.; S.D.
Union Sulphur Co. No. 6 Kaufman, sec. 13-9s-8w. Drlg. sdy. sh. 8,616 ft.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
Daryl Davis No. 1 Doiron, sec. 37-12s-10w. S.D. 40 ft.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. Top salt 3,820 ft.; S.D. 4,003 ft.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. R.U.; (cor.).
Stanolind O. & G. Co. No. 8 Duhon, sec. 22-12s-10w. Drlg. clay 108 ft.
Superior Oil Co. No. 1 Benson-Vincent, sec. 30-12s-10w. R.U.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; drlg. sh. 5,728 ft.
Union Sulphur Co. No. 43 Watkins, sec. 24-12s-10w. T.D. 4,124 ft.; P.B. 2,385 ft.; T.D. 3,866 ft.; salt; run 7-in. csg.; comp. for gas well.
York Oil Field Supply No. 3 Vincent, sec. 28-12s-10w. T.D. 2,947 ft.; P.B. 2,895 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. 13⅜-in. csg. 1,837 ft.; drlg. sh. 2,420 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Teche Sugar Co., sec. 58-13s-8e. 7-in. csg. 9,884 ft.; cg. sd. 10,870 ft.

Jennings—Acadia Parish

H. Fostiades et al No. 1 Washington-Opelousas, sec. 41-9s-2w. T.D. 6,890 ft.; well blew out; D.S. stuck.
Fred I. Getty No. 1 Jennings fee, sec. 46-9s-2w. T.D. 1,871 ft.; 6⅝-in. csg. 1,591 ft.; cg. 1,940 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; P.B. 2,585 ft.; drlg. L. 3,786 ft.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drk.; (corrected).
Reiter Foster Oil Co. No. 2 Crusel, sec. 42-9s-2w. T.D. 3,908 ft.; P.B. 3,146 ft.; tstg.
Shell Pet. Corp. No. 3 Community, sec. 40-9s-2w. T.D. 7,492 ft.; D.S. stuck.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to straighten hole; redrlg. sd.&L. 6,548 ft.
Superior Oil Co. No. 1 Julis Clement, sec. 46-9s-2w. T.D. 7,324 ft.; D.S. stuck; P. B. to sdtrk.; oil sd. 7,028-88 ft.; drlg. sdy. sh. 5,522 ft.
Superior Oil Co. No. 3 Iowa-Jennings, sec. 41-9s-2w. Drlg. sh. 6,206 ft.
Superior Oil Co. No. 6 Jennings-Heywood, sec. 41-9s-2w. Drlg. sd.&sh. 3,-441 ft.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. T.D. 7,480 ft.; P.B. 5,302 ft.
Superior Oil Co. No. 11 Leckelt, sec. 42-9s-2w. R.U.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. Top salt 3,819 ft.; S.D. 3,938 ft. D.S. stuck.

Lafitte—Jefferson Parish

Texas Co. No. 9 Lafitte, sec. 20-17s-24e. Top oil sd. 10,020 ft.; core oil sd. 10,-035 ft.
Texas Co. No. 1 Marrero Land & Investment Co., sec. 20-17s-24e. 13⅜-in. csg. 1,937 ft.; drlg. sdy. sh. 10,081 ft.
Texas Co. No. 2 Marrero Ld. & Inv. Co., sec. 21-17s-24e. Drlg. sh.&L. 7,419 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 7 Lafourche, sec. 12-18s-25e. 7-in. csg. 8,074 ft.; T.D. 9,786 ft.; sdtrkd. hole; rmg.; drlg. sh. 9,-565 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 2 State, sec. 65-17s-19e. R.U.
Fohs Oil Co. No. 3 State, sec. 65-17s-19e. 10¾-in. csg. 2,743 ft.; T.D. 9,539 ft.; sd. 9,517-33 ft.; P.B. 9,464 ft.; perf. csg. 9,482 ft.; T.D. 11,347 ft.; hole caving.

Lake Pelto—Terrebonne Parish

Texas Co. No. 20 State, sec. 8-23s-18e. Cg. sd. 5,970 ft.

Leesville—Plaquemines Parish

Texas Co. No. 63 Leesville, sec. 27-12s-22e. T.D. 5,695 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Frank Wurzlow, sec. 6-19s-19e. 13⅜-in. csg. 2,796 ft.; cored sd. and sh. show. oil 8,215-25 ft.; drlg. sh. 10,535 ft.

New Iberia—Iberia Parish

Wm. Helis No. 5 Bolivar, sec. 56-12s-7e. Drlg. sd. 2,351 ft.; no report.
Wm. Hellis No. 4 Gulf Land. sec. 52-12s-7e. T.D. 4,798 ft.; 7-in. csg. 4,798 ft.; I.P. 139 bbls. in 24 hrs.; sanded up; cutting and pulling screen; no report.
Wm. Hellis No. 10 Bernard, sec. 54-12s-7e. R.U.
Texas Co. No. 3 Bryant, sec. 25-12s-7e. T.D. 5,098 ft.; 7-in. csg. 5,096 ft.; I.P. 226 B.P.D.; 13/64-in. ck.
Texas Co. No. 10-B Hanzen, sec. 54-12s-7e. Drlg. sh. 1,491 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 Daly, sec. 44-8s-1e. Drlg. sh. 8,554 ft.
Humble O. & R. Co. No. 2 Federal Ld. Bk., sec. 34-8s-1e. Drlg. sh. 2,040 ft.
Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. Drk.
Humble O. & R. Co. No. 2 Ohlenforst, sec. 34-8s-1e. T.D. 8,119 ft.; 7-in. csg. 8,108 ft.; I.P. 730 B.P.D.; ¾-in. ck.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. R.U.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 5 Taylor, sec. 12-9s-4w. T.D. 9,106 ft.; 7-in. csg. 9,-051 ft.; I.P. 702 B.P.D.; ¼-in. ck.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 L. L. Barnard et al. sec. 16-10s-4e. 10¾-in. csg. 1,070 ft. W.O.C.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. T.D. 9,154 ft.; conditioning hole; 9⅝-in. csg. 8,647 ft.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec 24-9s-13w. R.U.
J. R. Turnbull et al No. 3 Industrial Lbr. Co., sec. 19-9s-12w. 7-in. csg. 2,-378 ft.; D.D.; T.D. 2,520 ft.; P.B. 2,-420 ft.; tstg.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. T.D. 5,068 ft.; P.B. and sdtrkd.; drlg. sh. 4,658 ft.
Union Sulphur Co. No. 858 fee, sec. 29-9s-10w. Drlg. sh. 3,763 ft.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 1-B Community, sec. 58-17s-20e. Drlg. 1,512 ft.
Pan American Prod. Co. No. 15 Harang, sec. 5-17s-20e. T.D. 5,930 ft.; abd.
Pan American Prod. Co. No. 16 Harang, sec. 7-17s-20e. T.D. 6,100 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. Top oil sd. 7,250 ft.; cg. oil sd. 7,254 ft.

Vinton—Calcasieu Parish

M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.
J. V. Redick No. 1 Vincent, sec. 34-10s-12w. T.D. 2,312 ft., oil sd.; 7-in. csg. 2,285 ft.; bailing.
Sutton-Burton No. 1 Calcasieu Natl. Bk., sec. 3-11s-12w. T.D. 4,500 ft.; S.D.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 N. H. Hirsch, sec. 44-3s-2e. Drlg. sh. 1,401 ft.
Continental Oil Co. No. 1 La. Ld. Improvement Co., sec. 46-3s-2e. 18⅝-in. csg. 247 ft.; top Cook Mtn. 7,997 ft.; top oil sd. 9,017 ft.; cg. oil sd. 9,055 ft.

Welsh—Jeff Davis Parish

Howard Clayton No. 1 Walshe, sec. 21-9s-5w. Cg. sd., oil show 1,030-31 ft.
Stanolind O. & G. Co. No. 1 W. B. Conover, sec. 20-9s-5w. 13⅜-in. csg. 2,-017 ft.

White Castle—Iberville Parish

Shell Pet. Corp. No. 6 Shingle. Drlg. sh. 3,307 ft.

LEGAL NOTICE

Call for Bids to purchase royalty oil accruing to the United States from the Lance Creek, Wyoming, oil field. Sealed proposals, in duplicate, will be received in the office of the Secretary of the Interior, Washington, D. C., on or before noon, February 28, 1938, from responsible bidders for the purchase, beginning April 1, 1938, of royalty oil accruing to the United States from Government lands in the Lance Creek, Wyoming, oil field. Detailed specifications on quantities offered for sale, required form of bids, deliveries, volume measurements, gravity determinations, bond requirements, and action on bids, should be obtained by prospective bidders from the Director, Geological Survey, Department of the Interior, Washington, D. C.; the oil and gas Supervisor, Geological Survey, Casper, Wyoming; or the Register, U. S. Land Office, Cheyenne, Wyoming. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., pursuant to the specifications, the envelope to be marked plainly "Bid on Lance Creek royalty oil, not to be opened before noon, February 28, 1938." No bid received after the time fixed herein for submitting bids will be considered. (Sgd.) Harold L. Ickes, Secretary of the Interior.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft. T.D. 3,925 ft.: D.S. stuck.

Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. Drlg. sh. 5,478 ft.

Calcasieu Parish

Republic Prod. Co. No. 1 Sabine Tram. Co., sec. 25-18s-14w. 10¾-in. csg. 1,981 ft.; T.D. 9,620 ft.; hole clean; S.D.; high wtr.

Shell Pet. Corp. No. 1 Calcasieu Natl. Bk., sec. 18-11s-10w. Drlg. sh. 6,346 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16 9s-7w. 15½-in. csg. 46 ft.; W.O.C.

Cameron Parish

Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. R.U.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State Gulf of Mexico, 3,800 ft. W, 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. 10¾-in. csg. 1,157 ft.; T.D. 7,166 ft.; 7⅝-in. csg. 7,166 ft.; T.D. 9,318 ft.; conditioning hole.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Elliott, sec. 3-9s-2e. T.D. 7,678 ft.; S.D.

Iberia Parish

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; drlg. sh. 6,540 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 3,752 ft.; D.S. stuck.

Jefferson Davis Parish

Union Sulphur Co. No. 1 Calcasieu National Bank, sec. 12-9s-6w. T.D. 8,524 ft.; 7-in. csg. cmtd. 8,524 ft.; P.B. 8,296 ft.; set retainer 8,272 ft.; sqzd. off perf.

Pointe Coupe Parish

Batchelor Oil Co. No. 1 Hackney, sec. 28-3s-8e. Drk.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. R.U.

St. Martin Parish

Carter & Stewart No. 2 Martin, sec. 32-9s-7e. Drlg.sh. 720 ft.

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. Drlg. sh. 7,883 ft.

Texas Co. No. 4 State Lake Mongoulois, sec. 14-10s-9e. Drlg. sh. 6,994 ft.

St. Mary Parish

Pet. Heat & Power Co. No. 9, sec. 9-13s-9e. R.U.R.

Terrebonne Parish

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. R.U.

Fohs Oil Co. No. 1 State, sec. 41-19s-19e. R.U.

TEXAS

Week Ending February 5

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 3 Gibson, J. W. Hall Sur. Drlg. sh. 2,686 ft.

Gulf Oil Corp. No. 3-A G. L. Wood, T. Alsbury Sur. Drlg. sh. 2,856 ft.

Shell Pet. Corp. No. 4-B Ramsey, J. W. Hall Sur. T.D. 6,369 ft.; 7-in. csg. 6,-565 ft.; flwd. gas; killed to recomp.

Hastings Field—Brazoria County

C. Andrade No. 1 Blumer, H.T.&B. Sur. No. 28. Spd.

Humble O. & R. Co. No. 1-C Brown, W. H. Snyder Sur. Drlg. sh. 2,537 ft.

Humble O. & R. Co. No. 1 Hortsman, H.T.&B. Sur. No. 37. Drk.

Humble O. & R. Co. No. 1 M. Lerew, H.T.&B. Sur. No. 38. T.D. 6,080 ft.; tstg.

Humble O. & R. Co. No. 6 W. G. McDeed, H.T.&B. Sur. No. 30. T.D. 6,080 ft.; tstg.

Humble O. & R. Co. No. 7 M. G. McDeed, H.T.&B. Sur. No. 30. R.U.

Jay Simmons No. 3 C. H. Alexander, H. T.&B. Sur. No. 28. Drlg. sh. 4,536 ft.

Stanolind O. & G. Co. No. 7 R. L. Autrey, H.T.&B. Sur. No. 37. R.U.

Stanolind O. & G. Co. No. 8 T. C. Edwards, Wm. Henry Sur. R.U.

Stanolind O. & G. Co. No. 1 Geo. Liverman, H.T.&B. Sur. No. 28. T.D. 6,080 ft.; tstg.

Stanolind O. & G. Co. No. 1 C. W. Massey, H.T.&B. Sur. No. 37. Drlg. sh. 4,612 ft.

Stanolind O. & G. Co. No. 16 L. D. Shaw, H.T.&B. Sur. No. 36. R.U.

Stanolind O. & G. Co. No. 2 G. Sheffield, H.T.&B. Sur. Drk.

Stanolind O. & G. Co. No. 3 H. M. Shyrock, H.T.&B. Sur. No. 29. Drk.

Stanolind O. & G. Co. No. 7 W. B. Wooster, A.C.H.&B. Sur. No. 1. Drlg. sh. 2,130 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 5 Bernard, C. Breen Sur. Drlg. sh. 2,568 ft.

Harrison & Abercrombie No. 1 Osberne, C. Breen Sur. R.U.

Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. R.U.

Sandy Point—Brazoria County

Stanolind O. & G. Co. No. 3 J. A. Fite, D. Talley Sur. 9⅝-in. csg. 1,027 ft.

West Columbia—Brazoria County

Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Loc.

Sterling Oil & Ref. Co. No. 1 Powers et al, Geo. Tennille Sur. Cg. sdy. sh. 5,-410 ft.

Texas Co.-Sterling O. & R. Co. No. 6 Phillips, G. Tennille Sur. Drlg. sh. 5,-540 ft.

Texas Co. No. 1 T. Robinson, George Tennille Sur. Drlg. sh. 5,110 ft.

Texas Co. No. 3 Smith, G. Tennille Sur. 7-in. csg. 5,537 ft.; T.D. 5,575 ft.; tstg.

Texas Co. No. 4 T. L. Smith, Geo. Tennille Sur. Drk.

Calhoun—Heyser—Victoria County

Blanco Oil Co. and Buchanan No. 4 C. S. Dunnwoody, A. Sisneros Sur. T.D. 5,-760 ft.; 7-in. csg. 5,630 ft.; tstg.

Blanco Oil Co. et al No. 7 C. S. Dunwoody, A. Sisneros Sur. Drlg. sh. 4,-812 ft.

Geo. Echols No. 8 W. H. Bennett, J. E. Galban Sur. Spd.

Geo. Echols No. 4 Lander, J. Galban Sur. Drlg. sh. 4,612 ft.

Gulf Oil Corp. No. 2 L. P. Schultz, J. E. Galban Sur. Drlg. sh. 5,281 ft.

Gulf Oil Corp. No. 3-B T. P. Traylor, J. E. Galban Sur. R.U.

Humble O. & R. Co. No. 18-B P. H. Welder, A. Sisneros Sur. R.U.

Humble O. & R. Co. No. 21-A P. H. Welder, J. M. Rios Sur. Drk.

Magnolia Pet. Co. No. 6 O. M. Lander, J. E. Galban Sur. Drk.

Sinclair Prairie Oil Co. No. 8 W. H. Bennett, A. Sisneros Sur. T. D. 6,048 ft.; tstg.

Seabreeze—Chambers County

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. R.U.

Sun Oil Co. No. 1 Seabreeze Ld. Co., H.T.&B. Sur. 102. 10¾-in. csg. 1,948 ft. drlg. sh. 5,607 ft.

Sun Oil Co. No. 1 J. T. White, sec. 118, H.T.&B. Sur. R.U.

Silsbee—Hardin County

Humble O. & R. Co. No. 1 B. L. Kirkendall, NE offset to No. 1 Howell. Loc.

Republic Prod. Co.-Houston Oil Co. No. 2 Ellery fee, J. Ellery Sur. Drlg. sh. 5,997 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 Nora Barraco, Reels & Troubough Sur. Drk.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Maggie L. Peters, W. K. Hamblin Sur., Abst. 317. 10¾-in. csg. 1,197 ft.

E. L. Smith and H. B. Ownby Drlg. Co. Geo. Eyers Sur. Drk.

H. E. Williams No. 1 A. Vega, G. Williams Sur. Drk.

Friendswood—Harris County

H. C. Cockburn et al No. 1 H. C. Cockburn, Wm. K. Smith Sur. Snd.

Humble O. & R. Co. No. 1 G. Durwood, Perry and Austin Sur. Drlg. sh. 4,-354 ft.

Humble O. & R. Co. No. 1 Etta Gibson, Perry and Austin Sur. 10¾-in. csg. 1,063 ft.; T.D. 6,042 ft.; rng. csg.

Humble O. & R. Co. No. 1 J. L. Jones and E. A. Gray, Perry and Austin Sur. Drk.

Humble O. & R. Co. No. 1-B J. L. Jones, Perry & Austin Sur. Drlg. sh. 4,628 ft.

Humble O. & R. Co. No. 1 N. G. Kildahl, Perry and Austin Sur. Drlg. L. 3,438 ft.

Humble O. & R. Co. No. 1 Pierce, W. K. Smith Sur. T.D. 6,050 ft.; flwd. oil; killed to recomp.; high gas-oil ratio.

Humble O. & R. Co. No. 2 J. J. Settegas, Perry and Austin Sur. Drk.

Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Humble O. & R. Co. No. 1 N. G. Kildahl, Perry and Austin Sur. Drlg. L. 3,438 ft.

Hitchcock—Galveston County

N. W. Hunter No. 2 M. Stewart, J. Spillman Sur. Drlg. sh. 2,627 ft.

LaBelle—Jefferson County

Sun Oil Co. No. 3 Broussard-Hebert, B. Blackman Sur. R.U.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 3-A Phelan, S. Stevers Sur. Crooked hole; drlg. sh. 6,620 ft.

Hardin—Liberty County

Ark. Fuel Oil Co. No. 1 W. J. Green, A. B. Hardin Sur. Bldg. Drk.

Atlantic Ref. Co. No. 1 J. V. Cessna, H. B. Johnson Sur. Drlg. sh. 2,110 ft.

Atlantic Ref. Co. No. 1 Wm. McMurtry, H. B. Johnson Sur. T.D. 7,656 ft.; perf. csg. 7,563-66 ft.; comp.; no ga.

Atlantic Ref. Co. No. 2 W. McMurtry, H. B. Johnson Sur. Spd.

Atlantic Ref. Co. No. 1 Murphy, H. B. Johnson Sur. 10¾-in. csg. 1,081 ft.; T.D. 7,610 ft.; 7-in. csg. 7,591 ft.; perf. csg. 7,593-97 ft.; high gas-oil ratio; set cmt. retainer; perf. csg. 7,595-99 ft.; comp.; no ga.

Jack Frazier No. 2 B. F. Hanchey, H. B. Johnson Sur. Drlg. sh. 7,017 ft.

Jack Frazier No. 1 W. McMurtry, H. B. Johnson Sur. Drlg. sh. 6,536 ft.

Gulf Oil Corp. No. 1 J. C. Barfield, H. B. Johnston Sur. Drk.

Gulf Oil Corp. No. 1 J. H. Cessna, H. B. Johnson Sur. Drlg. sh. 5,730 ft.

Halliburton Oil Prod. Co. No. 1 Hanchey, H. B. Johnson Sur. R.U.

Humble O. & R. Co. No. 1 W. McMurtry, H. B. Johnson Sur. R.U.

Humble O. & R. Co. No. 1 Partlow, H. B. Johnson Sur. T.D. 7,645 ft.; 5-in. csg. 7,628 ft.

McAlester Fuel Oil Co. No. 2 V. B. Hinson, H. B. Johnson Sur. Drlg. sh. 4,-865 ft.

Sun Oil Co. No. 1 Cessna, A. B. Hardin Sur. T.D. 7,544 ft.; flwg. dist.; may kill to W.O.

Sun Oil Co. No. 1 A. A. Hisey, H. B. Johnston Sur. M.I.M.

E. W. Wickes No. 1 Tullos, H. B. Johnson Sur. T.D. 7,633 ft.; 5½-in. csg. 7,-623 ft.; comp.; no ga.

Bay City—Matagorda County

Hamman Explr. Co. No. 2 Thompson, E. Hall Sur. Drlg. 3,312 ft.; no report.

Pan American Prod. Co. No. 1 Richers, I.&G.N. Sur. X-3. Drlg. sh. 7,312 ft.

Buckeye—Matagorda County

United North & South Development Co. No. 1 G.B.M., Cotton Lge. 7-in. csg. 8,-667 ft.; T.D. 10,500 ft.; hole cleaned; W.O.O.; P.B. to 7,300 ft.; to sdtrk.; drlg. sh. 7,835 ft.

Palacios—Matagorda County

Atlantic Ref. Co. & McCarthy No. 3 Foley Ld. Co., L. Goodwin Sur. Cg. sh. 8,576 ft.

Orange—Orange County

J. M. Campbell No. 1 Scales, Wm. Dyson Sur. R.U.

Gulf Oil Corp. No. 1 Cora Granger, Wm. Dyson Sur. Drlg. 2,012 ft.

Gulf Oil Corp. No. 1 Granger Wm. Dyson Sur. R.U.

Gulf Oil Corp. No. 1 Orange National Bk., Wm. Dyson Sur. T.D. 5,922 ft.; 7-in. csg. 5,903 ft.; tstg.

Ryan and Thompson No. 1 Norwood, Wm. Dyson Sur. Drlg. sh. 2,510 ft.

Union Prod. Co. No. 2 Lutcher-Moore, Dryson Sur. Drlg. sh. 4,955 ft.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur. 15. Drlg. wtr. sd. 6,100 ft.

Gulf Oil Corp. No. 9 Sarah Wing, I.& G.N. Sur. No. 15. T.D. 5,190 ft.; rng. csg.

Spurger—Tyler County

Republic Prod. Co. No. 7 Hurd, N. Hurd Sur. T.D. 7,710 ft.; rng. csg.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Clemons State Farm, S. F. Austin 7½ Lge. Bldg. road.

Pure Oil Co. No. 1 Smith, S. F. Austin Sur. 9⅝-in. csg. 7,734 ft.; drlg. 7,738 ft.

Texas Co. No. 4 Freeport Sulphur Co., C. Arriola Sur. 10-in. csg. 1,214 ft.; T.D. 3,900 ft.; P.B. 2,564 ft.; sdtrkd.; T.D. 3,000 ft.; P.B. to sdtrk.; cd. sd. oil odor 3,539-48 ft.; T.D. 3,894 ft.; P.B. 3,425 ft.

Chambers County

A. A. Cameron et al No. 1 White, Solmon Brill Sur. R.U.

Leverne Decker et al No. 1 Broussard Trust, sec. 30, H.T.&C. Sur. R.U.

Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State, Galveston Bay. T.D. 6,030 ft.; cd. oil sd.; rng. csg.

Colorado County

Coyle-Concord No. 1 Hancock-Broussard Hill Duffner Sur. 10¾-in. csg. 1,098 ft.; drlg. sh. 6,026 ft.

Harris County

W. S. Howell No. 1 Root, A. McCormick Sur. Drlg. sh. 2,512 ft.

Jackson County

Magnolia Pet. Co. No. 1 West Ranch, R. Musquez Sur. Drlg. wtr. sd. 5,895 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. S.D. 4,050 ft.

Humble O. & R. Co. No. 1 State, Gulf of Mexico, sec. No. 8. Driving piling.

Glenn McCarthy No. 1 J. E. Broussard, C. Hillbrand Sur. T.D. 7,732 ft.; recvd. 29 thribbles of oil, 4 thribbles of S.W. 7-in. csg. on bttm.; perf. csg. 7,730-32 ft.; rec. 1,750 ft. oil. 250 ft. S.W.; squeezed off perfs.; W.O.C.; perf. csg. 7,718-27 ft.; flwg. 6 bbls. fluid per hr., 40% brksh. wtr.; killed well; sqzd. off perfs.; perf. 7,715-25 ft.; tstg.

Matagorda County

Pierce Estate No. 1 Pierce, I.&G.N. Sur. No. 7. T.D. 7,374 ft.; P.B.; cd. sd. in sdtrkd. hole 6,627 ft.; P.B. 6,227 ft.; stuck D.S.; fsg.

Sun Oil Co. No. 1 Fred Robbins, C. H. Vandeveer Sur. Drlg. sh. 9,428 ft.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. Spd.

Wharton County

Strake Pet. Co. No. 1 Strunck, L. P. Jennings Sur. Cg. 9,225 ft.

S. W. TEXAS WILDCATS

Atascosa County

L. W. Steiren No. 1 Crawford, 4 mi. W of Anchorage. T.D. 3,880 ft.; prep. to P.B. and test Austin chalk.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur. Top Austin Chalk with odor of oil 2,530 ft.; T.D. 2,514 ft.; 5½-in. csg. 2,443 ft. tstg.; showing some oil; R.U. to pmp.

J. I. Collins No. 1 J. C. Lofton, A. J. Denson Sur. T.D. 2,002 ft.; abd.

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. Drk.

Bee County

Dirks Bros. No. 1 Mangus Beck, sec. 17, Chittim Miller Ranch Subd. T.D. 4,-273 ft.; S.W. sd.; D.S.T. 4,215-25 ft.; 200 lbs. pres. and oil-cut mud; run csg.

H. E. Pressy No. 1 F. H. Pressy, C. Williams Sur. Drlg. sh. 1,210 ft.

Bexar County

R. W. Fair No. 1 San Antonio Subd., J. H. Pickens Sur. 10-in. csg. 40 ft.; cd. L.; oil show 1,150-90 ft.; 7-in. csg. 1,-140 ft.; bailed dry; treated with acid; run tbg.; I.P. 20 B.P.D.; pmpg.

Hikok & Reynolds No. 1 Elvert, Thomas York Sur. T.D. 550 ft.; run 12½-in. csg.; drlg. L. 1,005 ft.

Joe H. Noake No. 1 Oppenheimer, W. Miller Sur. No. 180. Loc.

Chas. Persyn No. 1 fee, Wm. Lindsey Sur. Drlg. sh. 1,210 ft.

Caldwell County

D. L. Byrd No. 1 Parr, Jas. Hinds Sur., Abst. 125. Drlg. sh. 1,036 ft.

Mac-Wag-Tree Oil Co. No. 1 Roberts, W. House Sur. T.D. 2,633 ft.; L.; 5½-in. csg. 2,517 ft.; pmpd. 50 bbls. sulfur wtr. per day.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

De Witt County

Caldaboard Corp. No. 2 Afflerbach, I. W. Criswell Sur. S.D. 4,485 ft.

Dimmitt County

Texas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23. Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.; drlg. L. 6,750 ft.

Duval County

Adolph Devore No. 1 E. R. Hagist, Sur. 265 ft. Cg. 1,464 ft.

Gillespie & Sons No. 1 Hamilton, J. Poitevent Sur. No. 85. 10¾-in. csg. 101 ft.; drlg. sh. 2,714 ft.

Frank Gravis No. 1 Megargal, J. Boyles Sur. R.U.

Magnolia Pet. Co. No. 1 Duval County Ranch Co., Sur. No. 195. Loc.

Magnolia Pet. Co. No. 1 A. Lopez, M. Lopez Sur. No. 82. S.D. 6,829 ft.

Southwood Oil Co. No. 1 Nolen, P. Cabello Sur. and F. Thompson Sur. No. 106. Drlg. sh. 3,810 ft.

Trinity Drillers No. 1 Peters, C.C.S.D. Sur. 66. R.U.

Edwards County

Amon G. Carter No. 1 Sweeten, SE¼, Blk. 2, Sur. 49. T.D. 5,111 ft.; 9-in. csg. 5,030 ft.; drlg. L. 6,316 ft.

Dan Auld No. 1 Henderson, sec. 46, Blk. E. 7-in. csg. 1,865 ft.; S.D. 3,190 ft.

C. V. Lyman No. 1 Brown, Blk. 3. O.W. D.D.; drlg. sh. 5,130 ft.; no report.

Guadalupe County

E. A. Hearn et al No. 1 Dudelof, Jas. D. Clements Sur. Drlg. sh. 720 ft.

Kreiger & Douglass No. 1 Oliver, R. Smith Sur. S.D. 2,363 ft.

Riddle Oil Co. No. 1 Weber, Guadalupe Torres Sur. Drlg. sh. 320 ft.

E. H. Robertson No. 1 Neighbors, Hugh M. Swift Sur. T.D. 2,055 ft.; abd.

Hidalgo County

Atlantic Ref. Co. No. 1 American Rio Grande. 7-in. csg. 8,505 ft.; T.D. 9,104 ft.; 5-in. csg. on bttm.; perf. csg. 8,-998-9,005 ft.; flwg. 19 bbls. dist. per day; ⅝-in. ck.; tstg.; squeezed off perf.; reperf. 8,810-20 ft.; flwg. gas and dist.; no gauge.

Jim Hogg County

Hamill & Smith No. 1 Holbein, sec. 9, Blk. 54, Las Animas Gr. T.D. 2,702 ft.; fsg.

W. L. Stephens et al No. 1 Grey, Simon De Hinojosa Gr. 10-in. csg. 41 ft.; drlg. sh. 2,598 ft.

Jim Wells County

H. M. Hill et al No. 1 Kuether, Lots 70 and 75, sec. 52, Haldeman Subd. S.D. 3,342 ft.

H. H. Howell et al No. 1 Goldapp, Jose Maria Garcia Sur. Spd.

Howell et al No. 1 Talbot, 181-ac. tr., Lavaca Gr. T.D. 6,012 ft.; P.B. 5,179 gas, some oil; reperf. csg. 3,317-22 ft.; swbg.; showing S.W.; squeezed off perf. 3,600-07 ft.; flwg. small amt. of gas; no ga.; T.A.

Pan American Prod. Co.-Southern Minerals Corp. No. 1 Hawkins, San Diego De Abajo Gr. 10-in. csg. 525 ft.; T.D. 6,022 ft.; abd.

Magnolia Pet. Co. No. 8 Seeligson, A. Rameriz Sur. 13⅜-in. csg. 1,206 ft.; drlg. sh. 4,136 ft.

Rowan & Hope No. 1 Robert Adams, T.&N.O. Sur. No. 19. 13⅜-in. csg. 1,-155 ft.; drlg. sh. 3,486 ft.

Karnes County

Randon Oil Co. No. 1 Radford, M. T. Carolos Martinez Sur. Drlg. 150 ft.

Kleberg County

Magnolia Pet. Co. No. 1 Dietz, Gabriel Trevino Sur. 13⅜-in. csg. 1,220 ft.; S.D. 7,050 ft.
Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. Dredging canal.

Lasalle County

Ralph B. Reed No. 1 Yeager, Blk. 7, Sec 8, Wallace Subd., Yeager ranch. S.D. 1,320 ft.

Lee County

Jas. E. Pederson No. 1 Turner, David Hudson Sur. S.O.&G. 6,140-80 ft.; sdtrkd. at 4,600 ft. and drld. to 6,132 ft.; S.O.&G.; set csg. 6,021 ft.; acdzg. with 20-bbl. load; when opened well flwd. 20-bbl. head and went dead; swbd. oil and wtr.; acd.; pulling tbg. to rework and wtr.; acd.; S.D.
Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. S.D. 3,995 ft.

Live Oak County

James Chew No. 1 Alma McNeil, Alexander Parks Sur. Cd. oil sd. 5,073-76 ft.; rng. csg.
Harvey & Henderson No. 1 Nichols, Thos. Henry Sur. Drlg. sh. 1,495 ft.
Karotkin & Richardson No. 1 Pape, Wm. R. Conner Sur. R.U.
Ray L. Martin No. 1 Adams, J. Buchannan Sur. S.D. 178 ft.
Parr & Delaney No. 1 Hogan & Stewart, A.B.&M. Sur. 45. Drk.
J. P. Payzor No. 1 San Antonio Joint Stock, J. J. Roberts No. 1 Mahone. Drlg. sdy. sh. 607 ft.
V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. Drk.
L. W. Stiern No. 2 Longe, Thomas Adams Sur. 10¾-in. csg. 60 ft.; T.D. 1,565 ft.; abd.

Milam County

Texedo Oil Co. No. 1 Graham, Charles Cronea Sur. S.D. 825 ft.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. Drlg. 859 ft.

McMullen County

Cities Service Oil Co. No. 1 O. E. Morris, Maria Del Pillar Perleda Sur. T.D. 1,752 ft.; abd.
Coyle & Bedwell No. 1 Two Rivers Rnch. Co., sec. 60. T.D. 1,501 ft.; abd.
Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. S.D. 707 ft.
J. H. Reynolds No. 1 J. H. Shiner, sec. 82, Shumway Subd. R.U.
Richardson & McCarthy No. 2 Martin, Sur. No. 7. S.D. 546 ft.
Rowan and Nichols No. 2 Rhodes, H.& G.N. Sur. Drlg. 1,536 ft.

Medina County

J. R. Trentman et al No. 1 Carle Merc. Co., V. A. Johnson Sur. Drlg. sh. 495 ft.

Nueces County

C. Andrade No. 1 John Dunn, P. Hinojosa Sur. No. 422. R.U.
Renwar Oil Co. No. 1 C. McKenzie, B. S.&F. Sur. No. 419. T.D. 5,872 ft.; run csg.; D.S.T. shwd. P.L. oil.
Renwar Oil Co. No. 1 Morgan, A.B.& M. Sur. 10¾-in. csg. 101 ft.; S.D. 5,280 ft.
Richardson Pet. Co. No. 1 Chapman, sec. 43, Laurels Farm Tr. No. 43. Abd. 6,810 ft.
Rutherford Oil Corp. No. 1 L. A. Stewart, Denman Sur. Drlg. sh. 5,650 ft.
Union Prod. Co. No. 1 Simmons, 1,000-ac. tr., Agua Dulce Gr. T.D. 8,706 ft.; P. B. 4,810 ft.; perf. csg. 4,810-35 ft.; tstg.

Refugio County

Continental Oil Co. No. 1 Scott Hrs., Dona A. Reogas Sur. 10¾-in. csg. 1,490 ft.; T.D. 3,006 ft.; S.D.; drlg. wtr. well.
Hogan Oil Co. No. 1 Kelley, M. & A. Roache Sur. T.D. 6,437 ft.; P.B. 6,002 ft.; perf. csg. 5,992-6,006 ft.; flwd. 150 bbls. fluid per day, 15% oil, balance S.W.
Hogan Oil Co. No. 2 Kelly, J. Powers Sur. Drlg. sh. 2,803 ft.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. T.D. 6,554 ft.; prep. to resume operations.
J. W. Cane et al No. 1 G. E. Guy, Geo. H. Paul Subd. Spd.
Conroe Drlg. Co. No. 1 J. R. Daugherty, Jas. McGloin Sur. Drlg. sh. 6,036 ft.
Plymouth Oil Co. No. 1 Brigham, Geo. H. Paul Subd. S.D. 5,045 ft.

Starr County

J. L. Collins No. 1 Francisco B. Guerra, Santa Cruz Gr. Drlg. sh. 4,581 ft.
Dodd Tr. No. 1 Wardner, Vela Sur., Porc 84. Abd. 1,535 ft.
Sun Oil Co. No. 2-D Guerra, La Sacatosa Gr., 2 mi. SW of Cuevitas field. Drk.
Transwestern Oil Co. and Davenport No. 3 Slick, sec. 527. T.D. 6,862 ft.; rec. all but 75 ft. pipe; 5½-in. csg. 4,500 ft.; perf. csg. 4,212-30 ft.; flwg. wash wtr., some dist. through 7/64-in. ck.; tstg.

Uvalde County

H. F. Wilcox O. & G. Co. No. 1 Morris, M. Carrello Sur. Drlg. 150 ft.

Victoria County

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. R.U.
Harry L. Edwards No. 1 Robertson, T. C. Burnham Sur. R.U.
Superior Oil Co. of Okla. and L. A. Gillespie No. 1 Mahon and Buhler, San Antonio Valley Ditch Sur., Abst. 368. M.I.M.

Webb County

Boysen & Jones No. 1 Watkins, San Casimero Gr. S.D. 2,690 ft.
Colton, Leslie and Mitchell No. 1 Lopez, F. Lopez Sur. 55. Cg. sdy. sh. 2,721 ft.
Gilcrease Oil Co. No. 1 Trofton, M. Lopez Sur. 282. 10¾-in. csg. 46 ft.; S.D. 75 ft.
Smith & Storey No. 1 Haines, Sur. 234. Core sh. 1,703 ft.

Willacy County

Magnolia Pet. Co. No. 1 Armendaiz, San Juan DeCarricitos Gr., Sh. 4. Drlg. sdy. sh. 8,546 ft.

Zapata County

J. W. Edwards No. 1 Garza, El Zoro ranch, Comitas Gr. Drlg. sh. 1,600 ft. no report.
Killam & Radcliff No. 1 Rodriquez, Blk. 10, Sh. 12. Drk.

EAST TEXAS

(Border Counties)

Rodessa—Cass County

Magnolia Pet. Co. No. 12 Rives, John Collum Sur. Set 16-in. csg. 253 ft.; W.O.C.
Union Prod. Co. No. 5 Bangus Unit, Tromwell Sur. Drlg. 5,463 ft.
G. H. Vaughn No. 1 Riley, J. Taylor Sur. R.U.

Bowie County

King Oil Co. No. 1 Ames, J. A. Tolbott Sur. D.S. stuck 3,910 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. T.D. 4,820 ft.; bldg. drk.; reconditioning hole.

Marion County—Rodessa

Arkansas-Louisiana Gas Co. No. 1 Holland, Hanks Sur. Drlg. L. 4,605 ft.
Ark.-La. Gas Co. No. 3 Wade Houston, Coy Sur. Drlg. 5,377 ft.
Ark.-La. Gas Co. No. 1 Howard, Thos. Gillespie Sur. R.U.
Geo. Barham No. 2 Brantley, Bennington Sur. Set 5½-in. csg. 5,993 ft.; T.D. 6,022 ft.
Geo. Echols No. 1 Whitfield, R. Bennington Sur. Set 10¾-in. csg. 2,047 ft.
Fohs Oil Co. No. 1 Henderson, Ewing Sur. Set 5½-in. csg. 5,990 ft.; T.D. 6,029 ft.; comp.; 386 B.P.D.; ¼-in. ck.; T.D. 6,025 ft.
Gulf Oil Corp. No. 1 Beard, Bennington Sur. Comp. 26 B.P.H.; ⅝-in. ck.; 8-in. 6,005 ft.; T.D. 6,041 ft.
Gulf Ref. Co. No. 1 Beal, Coy Sur. Set 5-in. csg. 6,092 ft.; T.D. 6,111 ft.; swbg. to test.
Heyser, Heard and Clardy No. 1-B Henderson, U. Ewing Sur. Drlg. 4,866 ft.
Heyser, Heard & Clardy No. 3 Henderson, Bennington Sur. Drlg. 5,122 ft.
Phillips Pet. Co. No. 1 Denton, Coy Sur. R.U.
Phillips Pet. Co. No. 1 Pruitt-Lockett, U. Ewing Sur. Drlg. 5,126 ft.
Shell Pet. Corp. No. 2 Cooke, Bennington Sur. Set 7-in. csg. 6,057 ft.; T.D. 6,087 ft.
Shell Pet. Corp. No. 2-A Henderson, Bennington Sur. Set 7-in. csg. 5,994 ft.; T.D. 6,037 ft.; comp. 25 B.P.H.; ¼-in. ck.
Shell Pet. Corp. No. 1 Whelan, Thos. Gillespie Sur. Drk.

Panola County

Glassell et al No. 1 Pierce & Chesbro, Soaps Sur. O.W.W.O.; old T.D. 5,881 ft.; W.O.
H. E. Preston et al No. 1 Rushing Est., Manning Smith Sur. T.D. 3,028 ft.; M.I. rig.

WEST TEXAS WILDCATS

Andrews County

Gulf Oil Corp. No. 1 State, sec. 8, Blk. 14. Sulfur wtr. in hole; P.B.
Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Tstg. 4,511 ft.
Seaboard Oil Corp. No. 1 Munger-Nix, sec. 1, Blk. A-4, P.S.L. Sur. Reaming 660 ft.
H. C. Wheeler No. 1 T. M. Gardner, sec. 15, Blk. A-35, P.S.L. Sur. Drlg. 480 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Tstg. 4,160 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd sec. 66, Blk. 10, G.H.&S.A. Sur. S.D. 7,075 ft.
Storey No. 1 Wilson, sec. 3, Blk. 212, T.& St.L. Sur. S.D. 2,545 ft.

Cochran County

Devonian Oil Co. No. 1 Duggan, Oldham Co. Sch. Ld. Sur. Tstg. 5,044 ft.
J. R. Meeker et al No. 1 Wright, Mills City Sch. Ld. Drlg. plug 4,930 ft.
P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands Running tbg. 5,077 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39 Blk. W, T.&P. Sur. S.D.O. 1,680 ft.
H. E. Ogden et al No. 1 Rawlins, sec. 390 Blk. B-21. S.D. awaiting csg. 2,260 ft.

Concho County

Barnett Oil Dev. Co. No. 1 Sims, Abst. 851, Carl Thiele Sur. Cellar and pits.

Cottle County

F. P. Hinds et al No. 1 Lee. 5 mi. SW of Paducah, A.B.&M. Sur. Cg. 4,385 ft.

Wilcox O. & G. Co. No. 1 Richards et al, sec. 761, Blk. Y, W.&G. Sur. S.D. 275 ft.

Crane County

J. W. Hampton No. 1 Thackston, W. L. Wilkinson Sur. S.D. 2,200 ft.

Crockett County

Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. Drlg. 9,086 ft.
J. N. Simpson No. 1 Hoover, G.C.&S.F. Sur. Tstg. 2,067 ft.
Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. W.O.C. 1,930 ft.

Culberson County

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. M.I.S.T.
C. A. Jarrell et al No. 1 C. M. Caldwell, C of SW¼ sec. 15, Blk. 100, P.S.L. Sur. S.D. 507 ft.; H.F.O.; rig moved off.

Dawson County

Albaugh No. 1 Robinson, E.L.R.R. Sur. T.D. 5,038 ft.; tstg.
Atlantic No. 1 Scanlan, sec. 83, Blk. M, E.L.R.R. Sur. P.B. from 4,965 ft. to 4,932 ft.; S.D. 4,932 ft.

Dickens County

J. F. Morrisey et al No. 1 C. L. Bird, sec. 290, Blk. 1, H.&G.N. Sur. S.D.; W.O. 2,000 ft.

Ector County

Bodins et al No. 1 Edwards. Drlg. 4,600 ft.
Wentz Oil Co. No. 1-B Parker. S.D.O. 4,802 ft.; C.O. 800 ft.; O.I.H.
L. H. Wentz Oil Co. No. 1-B Parker. Drlg. 4,335 ft.
Melhoan Drlg. Co. No. 1 Gulf Blakeney. Cg. 4,118 ft.

Edwards County

A. P. Carter No. 1 F. D. Sweeten, B.&B. Sur., 2 mi. E of Rock Springs. Drlg. 6,301 ft.
Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. S.D. 3,200 ft.
Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. S.D.O. 5,750 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Drlg. 3,531 ft.

Fisher County

Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. S.D. 3,340 ft.
General Crude Oil Co. No. 1 Morrow, sec. 185, Blk. 2, H.&T.C. Sur. Drlg. 3,537 ft.
Southern Oil Co. No. 1 Bocat, H.&T.C. Sur. S.D.O. 4,016 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 5,065 ft.

Gaines County

Amerada Pet. Corp. No. 1 R. W. Robertson, sec. 196, Blk. G, W.T.R.R. Sur. W.O.C. 5,112 ft.
Carter, Continental & Plymouth et al No. 1 Geisecke. Drlg. 4,900 ft.
Continental No. 1-45 Moore, sec. 45, Blk. AX, P.S.L. Sur. M.I.M.
Shell Pet. Corp. No. 1 M. B. Robinson, sec. 344, Blk. G, C.C.S.D.&R.G.N.G. Sur. Drlg. 4,345 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Loc.
M. L. Richards No. 1 Slaughter, T.A. 3,521 ft.; sulfur wtr. 3,502-21 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. M.I.S.T.

Hockley County

Gulf Oil Corp. No. 1 M. G. Gordon, sec. 12, Blk. X, P.S.L. Sur. Drlg. 1,090 ft.
Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Drlg. 1,975 ft.
Honolulu Oil Co. No. 1-51 Dorthy Slaughter, Labor 51, League 37, Zavalla Co. Sch. Lds. Drlg. 2,980 ft.
Honolulu Oil Co. No. 1-77, Labor 77, League 37, Zavalla Co. Sch. Lds. Loc.
Sid Richardson No. 1 Slaughter, Maverick Co. Sch. Lds. R.U.S.T. 4,700 ft.
The Texas Co. No. 2 Slaughter, Labour 92, League 37, Zavalla Co. Sch. Lds. Drlg. 4,965 ft.; S.O.

Howard County

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. Drlg. 2,140 ft.
W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 3,077 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6 U.R. 3,663 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk 73, Twp. 7, T.&P. Sur. U.R. 2,610 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,500 ft.

Lamb County

Toddie L. Wynne, Tr. No. 1 Naunschwander, Labour 1, League 660, State Cap't. Lds. Drlg. 4,210 ft.

Loving County

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. Drlg. 3,900 ft.
Carpenter & Grierson No. 1 Mrs. Bennie Barnes, sec. 22, Blk. C-25, P.S.L. Sur Loc.
Woodley Pet. Co. No. 1 Klah, T.&P. Sur. S.D.; flwd. 40 B.P.D.; T.D. 3,963 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. W.O.C. 320 ft.

McCulloch County

Westbrook et al No. 1 Johnson, A. Nevendorf Sur. Tstg. 1,828 ft.
Nixon No. 1 Pierce. S.D. 1,001 ft.

Martin County

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. S.D. 4,189 ft.

Menard County

G. A. Clements No. 1 Murchison, sec. 80, B.S.&S. Sur., 8 mi. E of Menard. S.D. 600 ft.
C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Spud. and S.D.

Nolan County

Marland-Drake Drlg. Co. No. 1 J. H. Withers, sec. 65, Blk. 21, T.&P. Sur. Loc.

Pecos County

Harry Baker et al No. 1 White & Baker, sec. 53, Blk. 194, C.C.&S.F. M.I.M.
J. J. Dorr et al No. 2 Payton, sec. 99, Blk. 8, H.&G.N. Sur. Cellar and pits.
Ed Fainey No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. T.D. 2,055 ft.; will dpn.
Magnolia Pet. Co. No. 1 McKee. Set 9-in. 5,294 ft.; W.O.C.S.
Messenger & Osborn No. 1 Humble-Young, sec. 49, Blk. 10, H.&G.N. Sur. Acid. 1,807 ft.; pmpd. 35 B.O. 35 hrs.; S.D.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Prep. drlg. plug 7,129 ft.
Thompson & Minshall No. 1 Michaelson, 660 ft. N and W, sec. 24, Blk. 146, T.& St.L. Sur. S.D. 3,187 ft.
Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. S.D. 1,610 ft.
Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. S.D. 1,934 ft.
Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. 1,351 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk 12, G.H.&S.A. Sur. Drlg. new hole from 3,800 ft.

Reeves County

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur., 12 mi. NW of Toyah. Prep. acd. 4,375 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. Drlg. 630 ft.

Runnels County

E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; P.B. to 4,360 ft.; S.D.O. 4,384 ft.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. S.D. 5,004 ft.
Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Drlg. 5,757 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. T.D. 3,515 ft.; P.B. 2,500 ft.; tstg.
T. G. Shaw Oil Co. No. 1 First Natl. Bank. S.D. 3,389 ft.

Sterling County

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Loc.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 1,800 ft.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. M.I.M.

Sutton County

A. A. Basse and S. J. Sackett No. 1 W. A. Miers, sec. 54, Blk. 14, T.W.&N.G. Sur. Drlg. 55 ft.
Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonora. W.O.C. 4,083 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. Drlg. 500 ft.

Terry County

C. H. Hutto No. 1 Brownfield, E.L.R.R. Sur. S.D. 687 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Ward law. sec. 5, Blk. 17, H.&T.C. Sur. Drlg. 5,225 ft.
Southern Cross Oil Co. No. 1 J. W. Wilson, sec. 30, Blk. H, A.B.&M. Sur. Loc.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. U.R. 5-in.; T.D. 3,550 ft.

Upton County

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. Fsg. 210 ft.
Rutter et al No. 1 Egolb, sec. 5, J. F. Gibson Sur. Blg.; T.D. 3,294 ft.; S.D.O. 3,295 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. Drlg. salt 2,050 ft.

Ward County

Cities Service No. 2 Brandenburg, sec. 4, Blk. 32, H.&T.C. Sur. Tstg. 2,092 ft.
M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. S.D.O. 3,021 ft.
J. E. Fitzpatrick et al No. 1 H. B. Carr, sec. 125, Blk. 34, H.&T.C. Sur. S.D. 123 ft.; R.U.S.T.
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. Drlg. 725 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Spd. and S.D.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. Drlg. 820 ft.

Patillo & Webster No. 1 Johnson. Drlg 2,150 ft.
Sayre Oil Co. No. 1 Bertner, sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 60 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Drlg. 160 ft.
H. I. Wald No. 1 Brown Hrs., sec. 34, Blk. 1, H.&T.C. Sur. S.D.R. 1,065 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

Yoakum County

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. Cg. 5,185 ft.
Gulf No. 1 J. C. Futch, sec. 796, Blk. D, J. H. Gibson Sur. Drlg. 38 ft.
Humble No. 1 Abilene State Bank, sec. 37, Blk. AX, P.S.L. Sur. R.U.R.
Humble No. 1 Abilene State Bank, sec. 37, Blk. AX, P.S.L. Sur. Loc.
Ohio No. 1 Claywater, sec. 638, Blk. D, J.H. Gibson Sur. R.U.R.
Shell No. 1-C Baumgart, sec. 866, Blk. D, J. H. Gibson Sur. Drlg. 4,614 ft.
Texas Co. No. 1 Walker, sec. 794, Blk. D El. 3.656 ft.: T.D. 5,180 ft.; P.B. 5,162 ft.; S.D. 5,162 ft.
Stogner & Pipkin No. 1 Blade, J. H. Gibson Sur. S.D.O. 5,307 ft.

E. C. TEXAS WILDCATS

Anderson County

H. L. Parsons No. 1 H. B. Hemby, 7 mi NE of Navarro. 21 bbls. dist. and 8,000,000 ft. gas; tstg. 5,487 ft.
Rosier-Pendleton No. 1 N. M. Wells, E. Ritter Sur. Loc.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co. E. Miller Sur., 3 mi. SE of Zavalla Skidding drk.
Gar-Flo Oil Co. No. 1 J. L. Russell, J Morin Sur., 3 mi. E of Dibol. Cg. 2,353 ft.
Ginter Co. No. 3 Copes Heirs, J. Morin Sur., 4 mi. E of Dibol. S.D. 1,200 ft.
C. E. Parrott No. 1 J. C. Burres, W. Pluck er Sur., 2½ mi. W of Huntington. Drk.

Bowie County

Ferguson-Hill No. 1 Breckenridge. S.D 2,950 ft.
King Oil Corp. No. 1 W. W. Ames, 800 ft S and 1,650 ft. E of J. A. Tolbott Sur 4½ mi. NW of Texarkana. Drlg. 4,190 ft.

Cherokee County

Grey & Waife No. 1 Dupree, Lewis Jordan Sur., 2 mi. S of Rusk. Drlg. 4,190 ft.
J. G. Mayo et al No. 1 J. H. Bowlery, W. H. Walters Sur. Drlg. 1,000 ft.
Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. M.I.M.

Dallas County

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. R.U.

Falls County

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P Fulton Sur., 2½ mi. E of Donie. S.D. 956 ft.

Grayson County

Denver Prod. & Ref. Co. No. 1 E. B. Moore, E. Barnes Sur., ½ mi. NW of Whitesboro. Drlg. 200 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi SW of Longview Trinity test. El. 279 ft.; drlg. 8,287 ft.

Henderson County

Howard Pet. Co. No. 1 H. W. Barton, A. J. Allen Sur. S.D. 350 ft.

Hill County

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

Houston County

Peyton Bros. No. 1 J. N. Daniels, J. M. Procella Sur., ½ mi. N of Procella. M.I.M.

Lamar County

Cooper Bros. No. 2 L. B. Hayes, L. Roberts Sur. Loc.

Leon County

Lone Star Gas No. 1 Sarah Melasky, 1 mi. S of Buffalo pool. Drlg. 2,248 ft.

Limestone County

C. L. Brown No. 27 N. B. Boyd, R. B Longbotham Sur., 3 mi. S of Wortham T.D. 1,402 ft.; oil sd.; S.D.W.O. 1,455 ft.
J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Loc.
Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. P.B. from 8,847 ft.; comp.; D.&A.; T.D. 2,845 ft.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse: 6,500-ft. test; elev. 528 ft.; cg. 8,585 ft.

McLennan County

Chapman & Kahn No. 1 Carl Hartsman. B. C. Walters Sur., 1½ mi. S of McGregor. Drlg. 773 ft.
Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. Drlg. plug 201 ft.

Navarro County

Natural Pet. Co. No. 1 Karen Brown, W. T. Turner Sur., 2 mi. E of Roane. R.U.
Orchard & Biddle No. 1 Gibson, 6 mi. SW of Rural Shade, J. Bird Sur. Pits.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. S.D. 2,216 ft.
T. Sharpe et al No. 1 E. B. McDowell, T Jordan Sur., 1½ mi. S of Bassets. S.D. 3,160 ft.

Smith County

Mayo-Housh & Thompson No. 1 J. B. Mayfield, Wm. Keys Sur., 4 mi. SE of Tyler. M.I.M.

Trinity County

Billnoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. S.D. 120 ft.

Upshur County

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. Cg. 6,962 ft.
L. & G. Oil Co. No. 1 H. Williams, Roeder Sur., 2 mi. NW of Gracetown. Drlg 3,752 ft.

Van Zandt County

Pure No. 3 Listenbee, J. Goodman Sur. Drlg. 66 ft.

NORTH TEXAS WILDCATS

Archer County

Hull & Silk No. 1 L. F. Wilson, sec. 25, A.T.N.C.L. Sur. Loc.
Thos. A. Jirik No. 1 D. L. Wolf, J. Poitevent A-348 Sur. Loc.
Wayne King et al No. 1 C. A. Arthur, sec. 3, G.H.&H. Sur. A-158. S.D. 210 ft.
Lewis Prod. Co. No. 1 W. C. Frey, sec. 17, P.P.S.L. Sur. Drk.

Baylor County

D. S. Kelly No. 1 W. T. Waggoner, sec. 54, T.&N.O. Sur. S.D.O. 1,200 ft.

Clay County

Barnett Pet. Co. No. 1 Ben Nutter, sec. 30, Grayson Co. Sch. Lds. Drlg. 2,965 ft.
Wirt Franklin et al No. 1 Staggs, sec. 34, A.G.S.L. Sur. Setting surface.
Healdton O. & G. Co. No. 1 Wallace, Belch er Subd. Drlg. 3,550 ft.
Seitz, Comegys & Seitz No. 1 L. Wright, sec. 2632, T.E.&L. Sur. Drlg. 3,830 ft.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. Drk.

Cooke County

R. A. Craise No. 1 H. P. Ware, A.C.C. Bailey Sur. A-44. Drk.

Denton County

W. C. Curry et al No. 1 G. F. Owens, N Rudder Sur. A-1,060. S.S.O. 1,570-80 ft.; S.D.O.

Foard County

Texas Co. No. 14 Johnson, sec. 37, S.P R.R. Sur., Blk. L. Lime 3,760-80 ft.; treating with acid; C.O.

Jack County

Auers et al No. 1 Garrison, W.C.R.R. Sur. A-960. Drlg. 2,810 fyt.
G. M. Gillespie No. 1 A. M. Street, sec. 3339, T.E.&L. Sur. Drlg. 2,072 ft.
Hanlon-Buchanan, Inc., No. 1 Ed M. Myers, N. F. Rudmose Sur. A-1,803. O.S. 3,830-40 ft.; shot with 40 qts.; 2,800 ft of oil in hole; S.D.O.
Jones & Conklin No. 1 R. A. Heffner, H.&G.N. Sur. A-296. Loc.
O. J. Perrin No. 1 J. S. Rhodes, J. W. Coates Sur. A-1240. Drlg. 2,750 ft.
Taubert & McKee No. 1 R. H. Eatherly, J. H. Henderson Sur. A-1,749. Spud. and S.D.
Van Eman & Richards No. 1 Whitsell, Wm. McElroy Sur. A-599. Fsg. 3,235 ft.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. Spd. and S.D.
J. W. Sorrell et al No. 1 J. E. Walthall Sam. H. Smith Sur. A-662. S.D.O. 2,720 ft.

Wichita County

Bolin & Whittington No. 1 Waggoner Bros., sec. 21, H.&T.C. Sur. Matl.
King & Fabor No. 1 J. N. George, J. Waldschmidt Sur. A-571. Drlg. 3,400 ft.
Tom Medders No. 1 E. Fields, sec. 32, H.&G.N. Sur. R.U.R.
F. W. Merrick, Inc., No. 1 W. T. Waggoner, sec. 35, H.&T.C. Sur., Blk. 5. Drlg. 1,580 ft.
E. T. Noble No. 1 K. P. Abernathy, sec. 9, T.C.S.L. Sur. A-282. R.U.R.
Rathke Oil Co. No. 1 S. B. Burnett "Gulf," sec. 4, H.T.&B. Sur. A-752, 7-in. csg. 3,550 ft.; S.L. 3,552-3,670 ft.; 800 ft. O.I.H.
E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.; S.L. 3,885-3,907 ft.
Joe A. Worsham No. 1 Waggoner Bros., sec. 13. B.S.&F. Sur. A-343. Bkn. slate and O.S. 3,738-3,870 ft.; tstg.; H.F.O.

Wilbarger County

Barry & Hayes No. 1 McGill, sec. 3, Blk 9, H.&T.C. Sur. Drlg. 3,650 ft.
Loyd H. Brown No. 1 W. T. Waggoner, sec. 33, Blk. 6, H.&T.C. Sur. Drlg. 2,700 ft.
E. C. Lawson No. 1 Ruitsch, sec. 21, H. &T.C. Sur., Buk 9. R.U.C.T.
T. L. Moore Drlg. Co. No. 1 Mrs. G. E. Blackman, sec. 30, Blk 3, H.&T.C. Sur. Spd.
Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 2,575 ft.
B. R. Rainwater No. 1 J. A. Turkett, Blk. 8, W.C. Sur. Cmt. surf. pipe.

Young County

Anzac Oil Corp. No. 1 E. S. Graham, A Hines Sur. A-135. Drlg. 3,910 ft.
N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. S.D. 400 ft.
Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 2,640 ft.
Kadane-Griffith No. 1 Sanders, sec. 1989, T.E.&L. Sur. Drlg. 730 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

H. P. Evans No. 1 J. T. Hall, 2 mi. N of Bangs, 220 ft. from N line and 11,008 ft. from W line of SW¼ sec. 25, H.T. &B.R.R. Sur. S.D. at 425 ft.
R. B. Irving et al No. 1 T. C. Giddings, 390 ft. from S line and 3,382 ft. from W line of J. J. Cleiland Sur., 1 mi. E Thrifty. Correct owner was Irving & Prairie Oil Co.; 1,500-ft. test; S.D. 740 ft.

Callahan County

Dudley Dev. Co. No. 1 Smith Hrs., 7 mi. NW of Oplin, 1,080 ft. from S line and 620 ft. from W line of W½ of SW¼ sec. 4, S.P.R.R. Sur., Blk. 1. Loc.; 2,200-ft. test.
R. F. Gilman et al No. 1 W. A. Young, 5 mi. NW Clyde, sec. 37, B.B.B.&C. Sur. Drlg. 1,800 ft.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. R.U.R.
Hal Hughes No. 1 Poindexter, sec. 350, Geo. Hancock Sur., 2 mi. NE of Oplin. Set 7-in. 3,870 ft.; drlg. 4,100 ft.
J. C. Jackson et al No. 1 Thompson, 2 mi S. Eula, sec. 30, B.B.B.&C. Sur. Drlg. 1,872 ft.
Phillips Pet. Co. No. 1 Cozart, 1 mi. NW Scranton, M. Cherry Sur. Drlg. 4,046 ft.; est. 4,000,000 ft. of gas at 3,985-95 ft.; D.&A.; 2½ B.S.W.P.H. 4,138-40 ft., T.D.
R. F. St. John No. 1 A. E. Dyer, 4 mi. NW of Clyde, 1,385 ft. from E line and 1,323 ft. from S line of sec. 40, B.B.B. &C. Sur. Drlg. 2,850 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No 208. Drlg. 820 ft.
S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, A. Wickson Sur. Drlg. 732 ft.
Vic Eckholm et al No. 1 W. S. Duty et al, 5½ mi. S of Burkett, 220 ft. from N and W lines of SE¼ sec. 25, H.T.&B. Sur. Spud 2,500-ft. test.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. I. Terry, Desdemona pool, N. H. Kuyken dall Sur. S.O. in Ellenburger 4,697-4,710 ft.; trying shut off wtr.
Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk 2, H.&T.C. Sur.. T.D. 2,710 ft;; acid. 4,000 gal. 2,630-62 ft.; flowing 25 bbls. hourly thru ¼-in. choke.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. L. 3,315-30 ft.; est. 40 bbls.; drlg. 3,810 ft.
Hickok Prod. & Dev. Co. No. 1 J. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489. S.P R.R. Sur. Top Ellenburger 4,247 ft.; S.D.; W.O.C.
J. D. Kittrell No. 1 Reynolds, 5 mi. E of Carbon, sec. 23, H.&T.C. Sur., Blk. 1. Prep. to deepen.
Lone Star Gas Co. No. 1 M. Thomas, 5 mi. NW of Cisco, 668 ft. from N line and 660 ft. from E line of SE¼ sec. 478, S.P.R.R. Sur. Drlg. 2,250 ft.
Monark O. & G. Co. No. 1 Downtain, sec 14 H.&T.C. Sur. Blk. 4, 3 mi. N East land. S.D. 2,175 ft.

Erath County

J. Hickey et al No. 1 Smith, 5 mi. SE Desdemona, J. B. Smith Sur. Shot with 165 qts. 2,906-3,065 ft. in sd.; S.D.

Fisher County

Magnolia No. 1 Joe Howard, 330 ft. from S and W of E 102-ac., SW¼ sec. 185-2, H.&T.C. Sur. Spd. 500 ft.
Owens-Snebold & A. C. Varner No. 1 J. H. Milsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.B. Sur. Loc.
Sunray Oil Co. No. 1 Snowden Lse. (10-ac. tr.), 330 ft. from S line and 1,270 ft. from W line of Sur., 2½ mi. NE of Rotan, H.&T.C. Sur., sec. 185. Trt. 7,000 gal. acid 3,531-50 ft. T.D.; tstg.

Haskell County

Superior Oil Corp. No. 1 T. G. Hendrick. 330 ft. S line, 330 ft. E line, N½ sec. 9, A. Rodriguez Sur., rotary to 3,500 ft. Cg. 1,465 ft.

Jones County

Bells Wells Oil Co. No. 1 R. L. Pond 4½ mi. NE Avoca, 330 ft. from S and W lines of NE¼ sec. 165, B.B.B.&C Sur. D.&A. 3,504 ft.; T.D.
J. S. Bridwell No. 1 C. L. Carter, 220 ft. from N and E lines SW SE section 37-15, T.&P. Sur. Spd.
Jack Burleson No. 1 T. J. Lotspeich, 220 ft. from S and E lines of sec. 40-15, T.&P. Sur. S.D. 1,751 ft.
Danciger No. 1 Hugh E. Roberts, 220 ft. from S and W lines, E 110-ac., NE¼ sec. 37-15, T.&P. Sur. Rig.
Grisham & Hunter No. 1 E. D. Appling, NW¼ county, 1,208 ft. from S line and 1,450 ft. from W line of SW¼ sec. 32 B.B.B.&C. Sur. Sand 2,640-53 ft.; est 50 B.O.P.D.; 20 B.W.P.D.; drlg. 4,300 ft.
Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18, McMullen & McGloin Sur. 337. Drlg. up underreamer at 2,722 ft., T.D.
T. D. Humphrey No. 1 Fielder, 2½ mi. E Anson, sec. 34, O.A.L. Sur. H.F.W. 3,105 ft.; S.D. for orders; D.&A. 3,320 ft.; T.D.
Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub. 18, Austin Williams Sur. 339. Drlg. 1,100 ft.
Walter K. Jones No. 1 D. M. Neas, 506 ft. from E and 1,113 ft. from S of Neas 75 ac., D. Bustillos Sur. 189. Set 49 ft. 12½-in.; drlg. 1,435 ft.
F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Drlg. 1,700 ft.
Oil States Expl. Co. No. 1 Olson, 4 mi. N Avoca, sec. 182, B.B.B.&C. Sur. S.S. oil 4,820 ft. in Caddo lime; S.S. oil 4,984 ft.; top Ord. 5,198 ft.
Owens-Snebold No. 1 Alice Rhodes, 4 mi. W of Nugent, 330 ft. from N and W lines of NW¼ sec. 31, T.&P. Sur., Blk. 15. Lost hole 950 ft.; skd. 20 ft. E; U.R. S.S.O. 1,980-90 ft.; R.B.S.O. 2,227-45 ft.; drlg. 2,275 ft.
Roeser & Pendleton No. 1 fee, 2 mi. NW of Nugent, 2,800 ft. from N line and 3,240 ft. from W line of sec. 4, T.&P. Sur., Blk. 15. U.R. 5-in. from 3,710 to Sur., Blk. 15. Trying shutoff at 3,780 ft.; T.D.
B. H. Roth No. 1 D. A. Kinney, 4,000-ft. test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Drlg. 800 ft.
Dale Smith & Bert Fields No. 1 C. L. Carter, 3 mi. SW of Nugent, 220 ft. from N and W lines of SE¼ of SE¼ sec 37, T.&P. Sur., Blk. 15. Drlg. 1,927 ft.; S.O.; shot 20 qts. 1,875-85 ft.; P.B. to cmt.
Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. S.D. 2,180 ft.
Joe A. Worsham et al No. 1 J. H. Commons, 330 ft. from S and E lines, Steffens Subdiv., Lot 7. A. W. Hill Sur. No. 4. Spd. (tight well).

Mills County

Balyaet & Boyd No. 1 Westbrook, 7 mi. W of Goldthwaite, 4,950 ft. from S line and 4,290 ft. from W line of Caldwell Co. Sch. Ld. Sur. Drlg. 1,000 ft.

Nolan County

C. E. Hyde et al No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft.; loc.

Palo Pinto County

Brazos River Gas Co. No. 5 M. B. Costello B, 1½ mi. N Pickwick, 1,397 ft. from N line and 150 ft. from W line of survey (W line being river bank), 660 ft. SW No. 4, R. R. Williams Sur. Drlg. 3,100 ft.
W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,510 ft.
Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. Drlg. 910 ft.
W. K. Gordon et al No. 1 Johnson, 5 mi. N Gordon, John Bird Sur. Drlg. 3,550 ft.
Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. S.D. 200 ft.
King Oil Co. No. 1 S. F. Lee, 4 mi. NW Graford, 933 ft. from N and W lines of sec. 1,744, T.E.&L. Sur. Drlg. 3,985 ft.
Ernest Lloyd et al No. 1 McClure, 3 mi. NE Graford, sec. 2,004, T.E.&L. Sur. S.D. 1,200 for csg.

Shackelford County

Danciger No. 2 J. E. McCown, 330 ft. from S and E sec. 158, B.B.B.&C. Sur., N offset to Haterius. Drlg. 1,320 ft.
Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; S.D. 360 ft.
Forest Dev. Corp. No. 1 T. G. Hendrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; gas 1,662-65 ft., incr. est. 4,000,000 ft., 1,680-85 ft.; est. 1,000,000 ft. 1,804-06 ft. and 1,810-15 ft.; S.S. oil and wtr. 1,864 ft.; inc. wtr. 1,880-82 ft. T.D.
Hugh King, Jr., et al No. 2 Davis-Walker, sec. 55-13, T.&P. Sur. S.S.O. 3,427-32 ft.; S.D. 3,450 ft.
Iron Mountain Oil Co. No. 1 E. O. Beck, NW cor. county, 300 ft. from S line and 299 ft. from W line of sec. 162, B.B.B. &C. Sur. Drlg. 1,100 ft.
C. J. Kleiner et al No. 1 Morris, 2 mi. NE Bluff Creek pool, sec. 187, E.T.R.R. Sur. Drlg. 2,065 ft.
R. C. Parker No. 1 J. Smalley, NW cor. of NE¼ county, 1,245 ft. from N line and 1,260 ft. from E line of sec. 11, E.T.R.R. Sur. Spd.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 1,600 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371. H.&T.C. Sur., Blk. 2. Prep. run 12½-in. at 1,935 ft.

Throckmorton County

Humble O. & R. Co. No. 1-A Reynolds Cattle Co., 330 ft. from S and E lines, sec. 7-2, A.B.&M. Sur. U.R. 1,972 ft.
Morris & Spoonts No. 1 Alden Bros., NW cor county, 1,350 ft. from E line and 1,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 610 ft.

PERSONAL

DONALD W. DOUGLAS, president of Douglas Aircraft Company, and GEORGE W. STRATTON, executive to Mr. Douglas, have organized the Douglas-Stratton Oil Company and will develop prospective oil land in the Santa Maria area, in California. A. L. BERGERE is general manager.

C. M. BOGGS, president of Kanotex Refining Company, Arkansas City, Kans., and MRS. BOGGS are spending a vacation in Gulfport, Miss., where a daughter is attending Park College. Mr. Boggs is serving his third term as president of the Western Petroleum Refiners Association. He expects to return to Arkansas City the latter part of February.

D. B. McDANIEL, Gulf Coast drilling contractor of Houston, Tex., is on an extended business and pleasure trip to California.

VICTOR COTNER, chief geologist for the Columbian Carbon Company, New York, visited his old home in Amarillo, Tex., last week.

R. T. EASTELL, president of Washington Oil Company, accompanied by MRS. EASTELL and their daughter, arrived in Los Angeles this week from Pittsburgh, Pa., to spend the winter.

AXTELL J. BYLES, New York, president of the American Petroleum Institute, will be the principal speaker at the annual banquet of the North Texas Oil & Gas Association, Saturday, February 26, in Wichita Falls.

JOHN ALBAN has resigned from the land department of the Phillips Petroleum Company in Bartlesville, Okla., to become executive head of the lease and land department of Stahl Petroleum Company, Oklahoma City. Mr. Alban had been with Phillips 12 years.

JAMES E. DUFFEY, 73, pioneer oil operator of Tulsa, was discharged last Sunday from a hospital in that city where he had been confined since January 8, when he was struck by a fire department automobile. Mr. Duffey's left leg was so mangled that amputation was necessary, and for several days he was not expected to recover.

D. A. McGEE, chief geologist and vice president in charge of production for Kerlyn Oil Company, Oklahoma City, has been elected to the board of directors. T. M. KERR, a director, was made a vice president. Until a year ago Mr. McGee was chief geologist for the Phillips Petroleum Company.

A. B. JENKS, drilling superintendent for Fullerton Oil Company in the Los Angeles Basin, has been placed in charge of a wildcat test being drilled by his company in the Monterey Bay region of California.

J. L. STEVENS, production superintendent for Chanslor-Canfield Midway Oil Company at Fellows, Calif., has been appointed chairman of the Mount Poso-Round Mountain field committee to replace H. H. DIEVENDORFF, superintendent for Petroleum Securities Company in the San Joaquin Valley. Mr. Dievendorff resigned because his Kettleman Hills headquarters were too far removed from the center of the committee's activities.

R. K. PAINE, of Standard Oil Company of California, has been named pipe-line superintendent at Taft to succeed EDWARD McMAHON, who is retiring after 30 years of service. Mr. Paine, now assistant superintendent, will assume his new duties March 1 under J. J. WILT, manager of the department.

D. M. COX, New York division manager, was official host at a three-day meeting of Esso Marketers sales representatives which began Monday of this week in Lake Placid, N. Y. Eight states and the District of Columbia were represented. New York executives who headed the group included R. T. HASLAM, general sales manager of the Esso Marketers, A. CLARKE BEDFORD, president Colonial Beacon Oil Company; F. W. ABRAMS, president Standard Oil Company of New Jersey; C. G. SHEFFIELD, R. N. KEPPEL, E. A. HOLBEIN, F. M. SURFACE and J. W. CONNOLLY.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The South Penn Oil Company enters the Mexican field by allying itself with the Penn-Mex Oil Company, a Pittsburgh, Pa., concern. The South Penn will be in charge of field operations.

Pipe line companies, or their producing affiliates, are not permitted to purchase leases in the Osage Nation, Oklahoma. This is an Interior Department ruling.

Frederick Coast, 87, who was one of the early day shippers of crude oil by barge down the Allegheny River, died on February 2, in Oil City, Pa.

A 4-inch pipe line 246 miles long was laid in 1911 from Matadi to Leopoldville, in Belgian Congo, Africa, to supply Congo River steamers with fuel. It was built by Societe Anonyme des Petroles du Congo, capitalized at 6,000,000 francs ($1,158,000). There are eight pumping stations along the line.

A 30-barrel well has been completed at about 900 feet near Dayton, N. Mex., 12 miles south of Artesia, by the Pecos Valley Oil & Gas Company.

20 YEARS AGO

W. Watson Rutherford, British oil man has been given the title of knighthood, which inspired an Oklahoma editor to remark that the only titles American oil men are interested in are titles to good oil leases.

Mexican Gulf Oil Company No. 2 Lacorte, Lot 8, Tepetate, Mexico, is flowing 30,000 barrels of oil per day.

Pennsylvania oil is quoted at $4 per barrel, the highest price since December 13, 1876.

Thomas O'Donnell has been placed in charge of production in the Mid-Continent fields by the Federal Fuel Administration.

10 YEARS AGO

Venezuelan oil delivered to the U. S. East Coast refineries at 70 cents per barrel is tough competition for American oil producers.

The Hendrick pool in Winkler County, Texas, reaches a new production peak of 118,000 barrels per day. West Texas is producing 288,000 barrels per day.

S. A. HARTWELL, JR., Oil City, Pa., assistant secretary of the Pennsylvania Grade Crude Oil Association, is on a business trip to Montreal.

JOSEPH E. POPKINS, of Washington, D. C., is in Shreveport, La., to supervise the beginning of a Woodbine sand test in wildcat territory, North Louisiana.

JOHN W. VAN TINE, for 60 years an oil producer in the Bradford field of Pennsylvania, was honor guest Monday, January 31, at a dinner given in Bradford in celebration of his eighty-first birthday.

J. EDGAR PEW, vice president of Sun Oil Company, and MRS. PEW sailed from Los Angeles Harbor a few days ago for Australia on board the steamship Mariposa. They will be gone for about two months.

L. M. GREEN, for the past two years assistant district manager of sales for the Texas Company in the New Mexico, Oklahoma and North Texas district, has been appointed district manager, with headquarters in Dallas.

JOHN T. LANGSTON, Sun Oil Company, was elected president of the Southwest Texas Oil Scouts Association at a meeting in San Antonio. M. G. CALVERT, Humble Oil & Refining Company, was chosen vice president and P. B. HINYARD, Shell Petroleum Corporation, secretary-treasurer.

E. G. GAYLORD, Standard Oil Company, San Francisco, has been named 1938 chairman of the advisory committee on fundamental research on occurrence and recovery of petroleum of the American Petroleum Institute's division of production. A. F. TERMAN, chief petroleum engineer in the San Joaquin Valley division for the Standard of California, was made a member of the committee.

PARAGRAPHS

A. F. HOLLIDAY, president of Hiawatha Oil & Gas Company (Benedum & Trees), with headquarters in Pittsburgh, Pa., is spending several days in Corpus Christi on business.

F. C. BARCLAY, of Longview, Tex., has been made manager of the East Texas Independent Petroleum Association. Under the guidance of M. T. FLANAGAN, president of the organization, and J. J. THOMAS, secretary-treasurer, the association plans to open offices in Longview to collect and compile data for members.

A. A. McLEAN, 82, active, and working every day, rounded out 59 years as a gauger for National Transit Company in the Duke Center, Pa., area last week. Mr. McLean joined National Transit in July, 1878, but was not assigned to work as a gauger till the following February. In 60 years of service he has lost five days' pay.

GRAYDON H. LAUGHBAUM, district geologist for Sinclair Prairie Oil Company in Oklahoma City, returned last week from Miami, Fla.

HOWARD M. KIRK, formerly geologist for the Republic of Turkey, but now on the staff of the Inland Exploration Company, working in Afghanistan, has been transferred for the winter to holdings of Amiranian Oil Company in northern Iran.

PAUL BARRETT, Findlay, Ohio, personnel director for Ohio Oil Company, has returned home after making a tour of inspection of the company's properties and offices in Kansas, Oklahoma, Texas and New Mexico. During his trip he spoke before the Rotarians of Tulsa and Bristow, Okla.

D. HAROLD BYRD, of Byrd-Frost, Inc., Dallas, Tex., producer and refiner, has been named a lieutenant colonel on GOV. JAMES V. ALLRED'S staff, in addition to being chairman of the governor's advisory aviation committee. Mr. Byrd is also chairman of the Dallas aviation advisory board.

T. C. BANTA, for the past eight years assistant chief designing engineer in the general engineering department of Sinclair Refining Company in East Chicago, Ind., has been transferred to New York, where he will serve as supervisor of materials and supplies for the Consolidated Oil Corporation and subsidiary companies.

MARRS McLEAN, independent oil producer of Beaumont and San Antonio, Tex., gave $60,000 for construction of the new physical education plant at Baylor University, Waco, Tex., the cornerstone for which was laid last week. Mr. McLean's gift was made in honor of his mother, MRS. RENA MARRS McLEAN, of Beaumont.

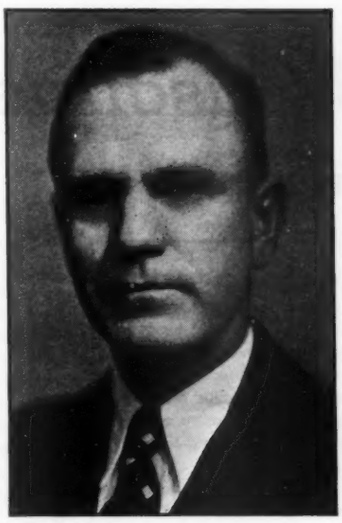
F. C. HALL, who in 1936 moved from Oklahoma City to Beverly Hills, Calif., is back in the former city, with the announcement he intends to stay. California oil interests, reported to have involved investment of $3,000,000, have been disposed of, and the home in Beverly Hills is to be sold. MRS. HALL was expected to arrive in Oklahoma City in the Hall airplane. Besides being one of the larger independent operators in Oklahoma before transferring his activities to California, Mr. Hall was known as backer of the late Wiley Post in epochal flights of the famous aviator. He is said to be planning important oil operations in Oklahoma. "I'm not ready to retire and sit around," said Mr. Hall.

R. C. BOWLES, chief geologist of Standard Oil Company of Kansas, has been elected a director, succeeding H. G. LEA, secretary-treasurer, who resigned. JOHN W. BLUE, vice president and director, was elected treasurer, and J. E. McCONNELL, director, was elected secretary.

EARL OLIVER of Ponca City, Okla., chairman of the stabilization committee, petroleum division, A.I.M.E., outlined the occurrence and method of the discovery of oil and the exploitation of fields at a sectional meeting of the American Society of Mechanical Engineers in New York last week. A. R. BLACK of the technical service department of the Shell Union Oil Corporation, was chairman.

Manager for Colombian

C. B. Williams, assistant manager of the West Texas division of the Texas Company in Fort Worth, Tex., has been named manager for the Colombian Petroleum Company in South America, with headquarters in Cucuta, Colombia. He left Fort Worth recently for New York, planning to go from there by train to Miami, Fla., and then fly to Cucuta over the Pan American Airways line. Mr. Williams graduated in electrical engineering from the University of Texas in 1929. He served in the World War as a first lieutenant in the air service of the United States Army. He entered the oil industry with the Texas Company at Tampico, Mexico, as chief engineer and remained until 1923. After four years in Mexico he was transferred to the United States as division engineer of the company's West Texas-New Mexico division, which position he held from 1923 to 1929. In the latter year he was promoted to assistant division manager of the West Texas division at Fort Worth, and has held that post until his promotion to manager of Colombian Petroleum Company (the South American subsidiary of the Texas Company).



C. B. WILLIAMS

Mr. Williams will be actively identified with the development of the Barco concessions in that country. He was recently the guest at a banquet in Fort Worth given by Texas Company employes throughout the division in his honor, and was presented with a gold watch. J. L. McMahon, manager of the West Texas division, made the presentation. Mrs. Williams and daughter, Laura Blount, plan to go to Colombia soon to join Mr. Williams.

JOHN H. BURNS, vice president of the Texas Crusader Oil Company, Houston, Tex., spent the past week in New Mexico visiting the various oil fields.

CHARLES B. WRIGHTSMAN, president of the Standard Oil Company of Kansas, is spending a few weeks in California, combining business and pleasure.

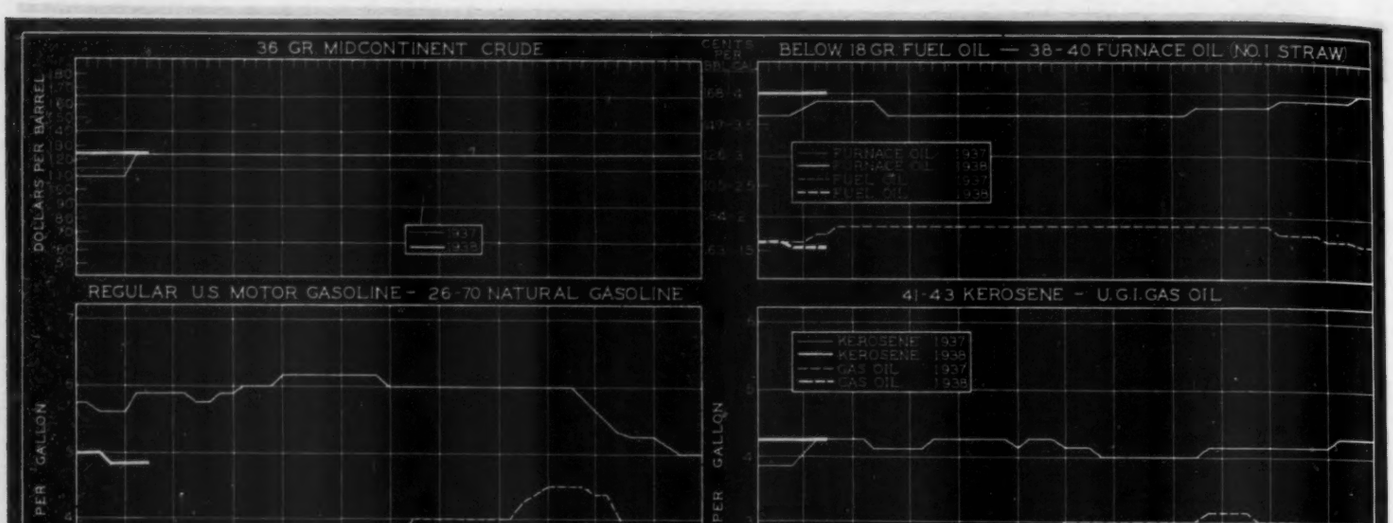
PAUL VAUDOIT, for the past 12 years geologist for Shell Petroleum Corporation in the Gulf Coast district, has resigned to engage in business for himself as a consulting geologist.

DON F. WILSON, for the past nine years engaged in tankcar marketing of oil products in the Middle West, resigned last week from Acme Petroleum Company, Kansas City, Mo., to join the sales staff of Petroleum Oils Corporation, that city.

W. D. SHIREY, formerly drilling superintendent for the Hall-Baker Company in Wilmington and Long Beach, California, has been transferred to the San Joaquin Valley, where he will oversee drilling operations being carried on for the Reserve Oil Company at Grapevine.

B. B. SMITH, drilling superintendent for Loffland Brothers, drilling contractors, of Tulsa, has gone to California, where the company is to drill an 11,300-foot well in the Rio Bravo field, San Joaquin Valley, for the Superior Oil Company. This is Loffland's first work in California. Rigging up has been completed.

J. ED ERWIN, executive vice president of the North Texas Oil & Gas Association, announced election of nine new directors: J. H. CABLE, L. T. BURNS, W. D. DUNCAN, H. L. GRAHAM, J. T. HARRELL, JACK KADANE, CLAUD VAUGHN, T. J. WAGGONER, JR., and J. T. TURBEVILLE. The K.M.A. field is reviving interest in this association.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
BELOW 18 GR. FUEL OIL — 38-40 FURNACE OIL (NO. 1 STRAW)
CENTS PER GALLON
REGULAR U.S. MOTOR GASOLINE - 26-70 NATURAL GASOLINE
41-43 KEROSENE - U.G.I. GAS OIL
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Benefits of Reduced Plant Operations Seen in Group 3 Gasoline Market

By T. F. SMILEY

Modest but definite improvement in the Group 3 tankcar gasoline market could be detected without eyestrain this week. It was attributed chiefly to further curtailment of refinery operations in Oklahoma, Kansas and Texas. The Sunday shutdowns in Texas too are having a salutary influence on marketing conditions in the Group 3 territory. The crude supply of one large independent refiner in West Texas has shrunk 10,000 bbls. a month, and the runs to stills have been cut proportionately. Others facing a similar situation have announced they will discontinue northern shipments of gasoline in the spot market.

Fewer Offerings of Gasoline

A marked drop in offerings of low-octane gasoline was reported, especially in East Texas, where shutdowns and cutbacks have had a pronounced effect on inventories. Among plants closed in addition to those named last week is that of the Premier Oil Refining Co. of Texas, in Longview. Only four refineries using crude eligible to federal tenders were reported operating in the East Texas area this week. Several other plants which had been running on state-tender crude have closed. Though their output was transported in trucks from loading-racks to points inside the state only, their removal from the active list provides an outlet for gasoline from other sources.

Buyers who had been able to pick up third-grade gasoline at 3⅝ cents for resale said this week they had shopped around in vain for material on that basis. Jobbers who had been buying at concessions through brokers found themselves compelled to pay the ruling prices. Refiners reported they were receiving inquiries from some brokers for the first time in months. This was interpreted as evidence that these brokers, their former sources of supply dried up, were hunting around for new ones. Though the better market tone was noticeable principally in the low-octane material, it was expected to work up into the higher brackets. Refiners were not predicting rising prices for the immediate future, but they expressed confidence a bottom had been established.

Refined Oil Market Barometer

Signs of softening in the heating oils were observable as a result of continued mild temperatures. Some forced selling was believed probable unless really cold weather arrives soon. Tone of gasoline market in Mid-Continent slightly improved by refinery curtailments, but less firm on eastern and western seacoasts. Lubricants expected to benefit from plant shutdowns.

MID-CONTINENT. Gasoline somewhat steadier. Heating oils easier. Naturals off.

EAST COAST. Light fuels suffer from mild temperatures. Gasoline less active.

GULF COAST. General market sluggish. Gasoline brighter. Kerosene off.

CALIFORNIA. Gasoline fractionally lower. Fuel oil soft. General market quiet.

PENNSYLVANIA. Reduced gasoline prices attracting little business. Fuel oil softer.

CHICAGO. Heating oils less active. Gasoline holding fairly well. Heavy fuels weak.

Refiners who withheld their heating oils from the spot market in January on the theory they were likely to get better prices a little later are doubting their sagacity now. Although quotations were said to be holding, an unsettled condition was evident. The cold wave, which had injected a little spirit last week, lacked staying quality. Unusually mild temperatures were reported throughout the country, and it was conceded their prolongation was likely to start unloading operations by refiners fearful of getting caught with heavy inventories at the end of the cold season. There no longer is any difficulty in finding material.

Naturals Continue Dive

Natural gasoline continued the dive which began in mid-January, since when prices have dropped close to 2 cents. Although little distress material was reported in Oklahoma, Texas storage was bulging. Gulf Coast refiners have begun making their spring motor fuel, which calls for a lower percentage of natural. At the same time there has been a slackening in the demand at the Gulf Coast for export and coastwise shipment. These conditions, along with overproduction of natural, have created a sick market. Jobber buying, spurred by the prevailing low prices, has picked up noticeably, but not enough to turn the adverse tides.

Lubricants were lifeless, but there was a feeling that a better market lay ahead. It was pointed out that important neutral and bright stock plants in the Mid-Continent have been shut down in the last few weeks, and the beneficial results of reduced output should become manifest soon. Wax was dull, with prices disposed to sag.

Moderate Weather Slackens Demand for Fuels on North Atlantic Coast

By H. STANLEY NORMAN

NEW YORK, Feb. 8.—Moderating temperatures depressed fuel oil activity along the North Atlantic seacoast last week leaving the petroleum market in general without an outstanding leader. Despite depressions in scattered points, the motor fuel market held at approximately the preceding week's levels. Trading in gasoline remains below expectations in this part of the country, but held nearer 1937 levels in January than was generally supposed.

Reduced demand for fuel oil accompanied the climb of the mercury as New York and its vicinity enjoyed another winter week of comparatively moderate temperatures. The slackened demand precipitated renewed tank-wagon price cutting by the small dealers, but tankcar quotations of 5 cents per gallon for the light burning oils, including No. 2, No. 3 and No. 4 remained unchanged, as did the posting for shore plant diesel oil in tankcars at 5 cents per gallon. Softening of the fuel oil market was also reflected in reports from the tanker trade, which included information that one boat was available on the Gulf Coast for February loading at 35 cents per barrel for delivery north of Cape Hatteras. Most of the large fleet operators, however, continued their dirty-boat quotations at 37 cents per barrel, the same as asked during the preceding week.

Japan was again active last week in the boat chartering market. One vessel was reported chartered for eight consecutive trips from the Pacific Coast to Japan starting in April at 23s 1d. Shippers were also active in chartering tankers for service from the Dutch West Indies to various European points with optional provision for loading on the Gulf Coast.

Heavy fuel oils were reported in some instances last week to have been turned in the industrial market at 3⅝ cents per gallon, with occasional sales at 3½ cents, but a majority of the business is still on a basis of 3¾ to 3⅞ cents.

Bunker C fuel oil to the marine trade is moving at approximately unchanged levels at $1.25 per barrel.

Motor fuel retail prices were reasonably stable in the New York area despite a reduction in dealer tank-wagon quotations of 1½ cents per gallon in Brooklyn by one company. The reduction was apparently a bid for gallonage and so far has registered no impression on the retail structure. Northern New Jersey, eastern Pennsylvania and Philadelphia gasoline prices were on an uncertain footing. Competition from Baltimore and eastern New Jersey refiners in the eastern Pennsylvania territory precipitated a cut of a quarter of a cent per gallon in Philadelphia gasoline prices, which was met by practically all dealers.

The greatest range of retail gasoline prices is still to be found in northern New Jersey centering around Newark and Jersey City, but radiating in all directions. Manhattan, Bronx, Queens, Long Island and Westchester gasoline prices have been unchanged for months. The unrest continues around Boston with several dealers marking down quotations on pump deliveries in keeping with earlier reductions in tank-wagon postings.

The tankcar price of 6¾ to 7 cents per gallon for 65 octane gasoline prevailing in New York harbor territory held reasonably firm last week, but open market trading was kept to a minimum. Some dealers complained that the January volume was off as much as 15 to 20 per cent from a year ago, but this was by no means a true reflection of the entire area. Gasoline of lower knock rating declined again last week in western Pennsylvania, where it was quoted as low as 4½ cents per gallon in tankcars. Even at reduced prices only a small amount of new business was attracted, although refiners with reforming facilities available were active in the market. The 65 octane motor fuel in western Pennsylvania was in fair demand, and prices were unchanged from the preceding week.

The first upward turn in several weeks was reported for Pennsylvania bright stocks, which moved ahead about a half cent per gallon on the strength of renewed export business. Cylinder stocks were also in fair demand, particularly the 600 s.r. material, but prices were unchanged from those prevailing during the preceding week.

Gasoline trading on the Gulf Coast staged a slight rally during the first week in February as many contract orders were loaded out during the first few days of the month. There had been a tapering off of business in the last week of January following a preceding brisk period in the middle of the month. Prices are generally maintained at preceding levels although an occasional cargo of distress material enters the picture at concession figures.

Crude oil and light fuel oils are continuing in strong demand for the export trade. Buyers are showing particular interest in the export grade of gas oil.

Diminishing demand for light fuel oils in the North Atlantic section is reported an influencing factor in reduction of runs to stills by some of the Texas plants, but probably of equal or greater consideration is the Sunday shut-down movement which has diminished the receipt of crude at several plants running entirely on day-to-day deliveries.

Importance of fuel oil in the marketing division of the oil business was again emphasized by Dr. R. T. Goodwin, manager of the Shell Union Oil Corp.'s fuel oil department, who addressed the metropolitan section of the American Society of Mechanical Engineers. Doctor Goodwin pointed out that the consumption of fuel oil has increased eight times as fast as gasoline since 1930, and that today's requirements are approximately equal to motor fuel. Doctor Goodwin again stressed his opinion that the fuel oil business will eventually settle to only two domestic and one industrial grades, a belief he has long held.

Effectiveness of the Sunday production shut-down in Texas has had a wholesome influence on the New York petroleum market, even though the full effects may take weeks to register. The general attitude of marketers is unquestionably improved by the prospects of tighter conditions and there is less inclination to grant price concessions for the sake of moving stocks. The feeling is evident in various marketing circles that current Gulf Coast prices will at least hold their present ground and perhaps strengthen in some directions as a result of the more rigid production curtailment. This does not necessarily apply to gasoline, but fully half of those canvassed feel that the present heavy gasoline stocks of approximately 84,000,000 or 85,-

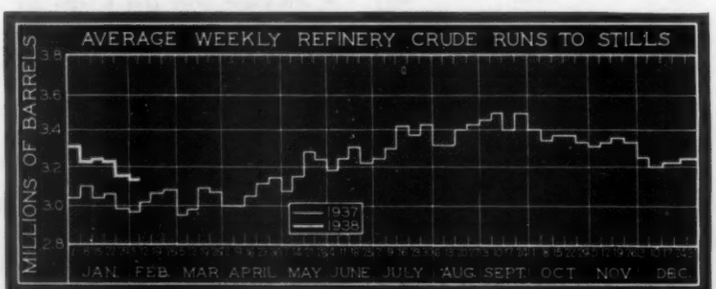
(Continued on Page 110)

A. P. I. Weekly Refinery Statistics

Week Ending February 5, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	517,000	20,550,000	10,976,000
Appalachian	88.4	96,000	3,340,000	1,227,000
Indiana, Illinois, and Kentucky	92.4	440,000	14,515,000	6,655,000
Oklahoma, Kansas, and Missouri	84.7	240,000	7,380,000	3,483,000
Inland Texas	56.6	128,000	2,648,000	1,685,000
Texas Gulf	95.7	704,000	12,618,000	10,181,000
Louisiana Gulf	96.6	122,000	2,606,000	3,210,000
North Louisiana and Arkansas	63.7	43,000	559,000	487,000
Rocky Mountains	69.7	56,000	2,067,000	711,000
California	90.9	494,000	15,221,000	77,214,000
Total reported	89.0	2,840,000	81,504,000	115,829,000
Estimated unreported	.....	315,000	4,980,000	2,790,000
*Estimated total	.....	3,155,000	86,484,000	118,619,000
*Estimated total previous week	.....	3,170,000	84,844,000	118,793,000
*February 6, 1937	.....	2,980,000	70,535,000	101,136,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending January 29, 1938	304,286,000 barrels
Week ending January 22, 1938	304,424,000 barrels
Week ending January 30, 1937	286,817,000 barrels

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of February 8, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank wag.
Chicago, Ill.	15 3	13 3	4.0	10.2
Decatur	15 3	13 1	4.0	10.2
Joliet	15 3	13 8	4.0	10.2
Peoria	15 3	13 8	4.0	10.2
Quincy	15 1	13 6	4.0	10.0
Davenport, Ia.	15 3	13 8	4.0	‡13.2
Des Moines	15 1	13 6	4.0	‡11.0
Mason City	15 4	13 9	4.0	‡13.3
Sioux City	15 3	13 8	4.0	‡13.2
Duluth, Minn.	17 0	15 5	5.0	10.9
Mankato	16 7	15 2	5.0	10.6
Minneapolis	16 7	15 2	5.0	10.6
Lacrosse, Wis.	16 7	15 2	5.0	10.6
Green Bay	17 0	15 5	5.0	9.9
Milwaukee	16 5	15 0	5.0	10.4
Detroit, Mich.	15 1	13 6	4.0	9.8
Grand Rapids	16 3	14 8	4.0	11.0
Saginaw	16.1	14.6	4.0	9.1
Evansville, Ind.	16 8	15 3	5.0	†10.7
Indianapolis	16 9	15 4	5.0	†10.8
South Bend	17 2	15 7	5.0	†11.1
Fargo, N. Dak.	16 7	15 2	4.0	11.6
Minot	17 9	16 4	4.0	12.8
Huron, S. Dak.	17 1	15 6	5.0	11.0
Kans. City, Mo.*	14 6	13 1	4.0	9.5
St. Louis*	14 9	13 4	4.0	9.8
St. Joseph	14 6	11 4	4.0	9.5
Wichita, Kans. *	14 1	11 0	4.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Iowa kerosene prices include 3-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Atl'tic, City, N. J.	12 75	11 25	4 0	8 5
Newark	12 75	11 25	4 0	8 5
Annapolis, Md.	14 85	13 35	5 0	9 5
Baltimore	14 25	12 75	5 0	9 0
Cumberland	16 65	14 15	5 0	10 0
Wash'g'n, D. C.	12 5	11 0	3 0	9 5
Danville, Va.	17 45	14 95	6 0	12 9
Norfolk	16 25	13 75	6 0	11 5
Petersburg	16 55	14 05	6 0	11 7
Richmond	16 55	14 05	6 0	11 7
Roanoke	17 75	15 25	6 0	12 9
Charles'n, W. V.	17 05	14 55	6 0	12 6
Parkersburg	15 35	13 85	6 0	11 2
Wheeling	16 25	14 85	6 0	12 2
Charlotte, N. C.	18 65	16 15	7 0	12 6
Hickory	19 15	16 65	7 0	13 0
Mt. Airy	18 95	16 45	7 0	12 8
Raleigh	18 25	15 75	7 0	12 1
Salisbury	18 75	16 25	7 0	12 7
Charleston, S. C.	17 25	14 75	7 0	11 1
Columbia	18 25	15 75	7 0	12 1
Spartanburg	18 95	16 45	7 0	12 9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Net dlr.	Inc. tax	Kero. tank-wag.
Atlanta, Ga.	21 0	18 0	7 0*	†14 0
Augusta	21 0	18 0	7 0	*14 0
Macon	21 0	18 0	7 0	*14 0
Savannah	19 5	16 5	7 0	*12 0
Birm'ham, Ala.	22 0	19 0	8 0	12.0
Mobile	22 0	19 0	9 0	12 0
Montgomery	22.0	19 0	9 0	†13 0
Jackson, Miss.	20 0	17 0	7 0	*13 0
Vicksburg	20 0	17 0	7 0	*13 0
Jacks'ville, Fla.	22 5	17 5	8 0	†11 0
Miami	20 5	17 5	8 0	†12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	20 5	17 5	8 0	10 5
Lexington, Ky.	19 5	16 5	6 0	11 0
Covington	18 5	15 5	6 0	11 0
Louisville	19 0	16 0	6 0	10 5
Paducah	19 5	16 5	6 0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Denver, Colo.	15 0	5 0	11 5
Grand Junction	19 0	5 0	15 0
Pueblo	13 0	5 0	10 5
Casper, Wyo.	17 0	5 0	11 5
Cheyenne	16 0	5 0	13 0
Butte, Mont.	19 5	6 0	15 5
Billings	19 5	6 0	15 5
Helena	19 5	6 0	15 5
Great Falls	19 5	6 0	15 5
Salt Lake City, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 0	6 0	18 0
Boise	21 5	6 0	18 0
Albuquerque, N. M.	17 5	*6 5	12 0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag.	Di-vided con'r.	Inc. dlr.	tax	Kero tank-wag.
Ohio points	16 0	15 00	5	0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Albany, N. Y.	14 5	12 5	5 0	9 0
*Met. N. Y.:				
M'nh't'n, Br'nx	14 5	12 5	5 0	8 75
Staten Island	14 5	12 5	5 0	8 75
Q'ns. & Brklyn	14 5	12 5	5 0	8 75
Buffalo	14 0	13 04	5 0	7 5
Rochester	15 0	13 17	5 0	8 5
Syracuse	14 5	13 12	5 0	9 0
Boston, Mass.	13 0	11 5	4 0	8 5
Portland, Me.	14 5	12 7	5 0	8 75
Manch'ter, N.H.	15 0	13 0	5 0	9 0
Burlington, Vt.	14 9	12 9	5 0	9 5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer. Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
San Francisco	17 5	18 5	4 0	11 5
Los Angeles	17 0	18 0	4 0	10 0
Fresno, Calif.	18 5	19 5	4 0	12 5
Phoenix, Ariz.	21 0	22 0	6 0	*17 0
Reno, Nev.	20 0	21 0	5 0	13 0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	22 5	23 5	6 0	16 0
Tacoma	20 0	21 0	6 0	13 5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Drl.	Inc. tax	Kero. tank-wag.
Omaha	17 7	16 2	6 0	10 5
McCook	17 5	13 5	6 0	10 0
Norfolk	18 1	16 6	6 0	10.9
North Platte	18 5	17 0	6 0	11 3
Scotts Bluff	19 2	16 0	6 0	12 0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
N. Orleans, La.	19 75	17 25	*10 0	†12 0
Baton Rouge	17 75	15 25	8 0	12 0
Alexandria	18 25	15 75	8 0	10 5
Lafayette	18 75	16 25	8 0	13 0
Lake Charles	18 75	16 25	8 0	12 5
Shreveport	17 25	14 75	8 0	9 5
Kn'ville, Tenn.	20 75	18 25	8 0	14 0
Memphis	18 75	16 25	8 0	12 0
Chattanooga	20 25	17 75	8 0	13 5
Nashville	19 75	17 25	8 0	11 5
Bristol	19 50	18 25	8 0	14 5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13 25	12 25	5 0	10 5
Pittsburgh	15 0	13 0	5 0	11 0
Allentown	14 25	12 75	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	14 5	13 0	5 0	11 0
Altoona	15 0	13 0	5 0	11 0
Dover, Del.	14 5	....	5 0	11 0
Wilmington	14 0	....	5 0	11 0
Springf'd, Mass.	13 5	....	4 0	8 5
Worcester	14 3	....	4 0	9 0
Hartford, Conn.	13 6	....	4 0	8 5
New Haven	13 5	....	4 0	8 0
Providence, R. I.	13 3	....	4 0	8 5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14 5	5 0	7.0
Oklahoma City	14 0	5 0	8.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14 75	5 0	8 0
Little Rock	17 25	7.5	9 5
Texarkana	14 0	5 0	8 5

Texas

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
Dallas, Tex.	14 0	18 5	5 0	8 0
Fort Worth	14 0	18.0	5.0	8.0
Houston	14 5	19 0	5 0	8 0
San Antonio	14.5	18.5	5 0	8 0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wax.
Halifax, N. S.	24.0	8.0	18 5
St. John, N. B.	24 0	8 0	18 5
Montreal, Que.	21 0	6 0	17 5
Toronto, Ont.	22 0	6 0	17 0
Hamilton, Ont.	22.0	6 0	17.0
Winnipeg, Man.	27 5	7 0	20 7
Brandon, Man.	28.1	7 0	22 3
Regina, Sask.	27 0	7 0	22 0
Saskatoon, Sask.	29 8	7 0	24.9
Edmonton, Alta.	26 5	7 0	21.5
Calgary, Alta.	24 0	7 0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Crude Oil Price Changes

The accompanying table lists posted prices at wells of a few representative fields in the United States. A complete survey of prices was published in the February 3, 1938, issue. All changes in price schedules are published complete at the time they are announced.

Oklahoma and Kansas: Below 29 degrees, $1.06; 29-29.9, $1.08, with 2 cents added for each degree upward to and including 40 degrees and over at $1.30. Effective January 28, 1937.

North Central Texas: Below 29 degrees, 96 cents; 29-29.9, 98 cents, with 2 cents added for each degree upward to and including 40 degrees and over at $1.20. Effective January 28, 1937.

Gulf Coast (Texas Co. schedule): Below 18 degrees, 90 cents; 18-18.9, 92 cents; 2 cents added for each degree up to and including 21-21.9 at 98 cents; then 3 cents added for each degree up to and including 26-26.9 at $1.13; then 2 cents added for each degree up to and including 34-34.9 degrees at $1.29. Gulf Refining Co. schedule continues 2-cent differential to 40 degrees and over at $1.41. Humble Oil & Refining Co. schedule begins at 20-20.9 at 95 cents, with 3 cents added for each degree up to and including 25-25.9; then 2 cents added for each degree up to and including 40 degrees and over at $1.41. Effective January 28, 1937.

North Louisiana-Arkansas: Below 25 degrees, 90 cents; 25-25.9, 92 cents, with 2 cents added for each degree up to and including 40 and over at $1.22. Effective January 28, 1937.

Rodessa, Tex.-La.-Ark., 5 cents higher on each degree than North Louisiana-Arkansas gravity schedule (Jan. 28, 1937).

California: Prices in most California fields have been unchanged since early in 1936. Effective October 15, 1937, Wilmington posted 16 gravity and under at 75 cents, with a top price of $1.21 for 30 degrees and over.

Smackover, Ark. (Jan. 28, 1937)	$.90
Lisbon, La. (Dec. 13, 1937)	.98
East Texas, Tex. (May 22, 1937)	1.35
Bradford-Allegany, Pa.-N. Y. (Dec. 1, 1937)	2.20
Illinois-Indiana (Jan. 23, 1937)	1.35
Midland, Mich. (Jan. 5, 1938)	1.12
Buckeye, Mich. (Jan. 5, 1938)	1.00½

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of February 8, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 oct. and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
64-66 375	.04½	.04¾
68-70 360	.04⅞	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
60-62 400	.03⅞	.04
64-66 375	.04½	.04¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
63-66 octane	.04⅝	.04¾
67-69 octane	.05	.05⅛
70-72 octane (regular)		.05½

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
67-69 octane	.05	.05⅛
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04	.04⅛
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05⅛
60-62 400 grades:		
62 octane and below	.04	.04⅛
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05⅛
64-66 375	.04¾	.05
68-70 360	.05	.05⅛

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04½	.04¾
65 octane	.06¼	.06½
68-70 octane	.06¾	.07

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08½
58-60 400, 65 oct. and higher	.08	.09¼

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.07	.07⅛
Philadelphia	.07	.07⅛
Boston	.07½	.07⅝
Baltimore	.07	.07⅛
Charleston, S. C.	.07	.07⅛
U. S. Motor, 65 and above:		
*New York (Bayonne)	.07⅛	.07⅜
Philadelphia	.07⅛	.07⅜
Boston	.07¼	.07⅝
Baltimore	.07¼	.07½
Charleston, S. C.	.07¾	.08

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05⅛
60-64.9		.05¼
65 octane and higher	.05½	.05⅝

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04½	.04¾

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02¼	.02⅜
Grade 18-55	.02⅜	.02⅝

NORTH TEXAS—

Grade 26-70		.02¼
Grade 18-55	.02⅝	.02¾

CALIFORNIA—

75-85 375-390	.06½	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04¼	.04⅜
41-43 gr., 300-520 e.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅜	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04¼	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04½	.04⅝

ARKANSAS (Ark., N. La., Miss. del.)—

41-43		.04⅝

PENNSYLVANIA (inland refineries)—

45	.05⅜	.05½
46	.05½	.05⅝
47	.05⅝	.05¾

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05¾	.06¾

NEW YORK (Bayonne, N. J.)—

41-43		.06

***GULF COAST (domestic)—**

41-43	.04⅞	.05

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42		.04⅛
No. 1 straw, 38-40		.04
No. 2 straw, 32-36		.03⅞
No. 2 dark, 32-36		.03¾
No. 3 zero to 15, 28-32	.03⅛	.03⅝
No .3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42		.04⅛
No. 1 straw, 38-40		.04

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅝	.03¾

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅞	.04

CHICAGO (Based on Group 3)—

No. 1 prime white 38-40	.04⅛	.04¼
No. 1 straw, 38-40	.04	.04⅛
No. 2 straw, 32-36	.03⅞	.04
No. 2 dark, 32-36	.03⅝	.03⅞
No. 3, zero to 15, 28-32	.03⅛	.03⅝
No.3, 15 and above, 28-32	.03	.03⅛

NEW YORK (Bayonne, N. J.)—

*No. 1		.06
*No. 2		.05¼
*No. 4		.05

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.80	.85
Below 18 fuel oil, industrial	.67½	.72½

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.80	.85
Below 18 fuel oil, industrial	.67½	.72½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03	.03⅛
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.80	.87½
No. 5, 15 and above, 18-22	.75	.82½
No. 6, low cold test, 10-16	.72½	.80
No. 6, 15 and above, 10-16	.55	.60

PENNSYLVANIA (inland refineries)—

36-40	.04⅞	.05⅛

CALIFORNIA

Los Angeles:		
30-40 gas oil, per bbl.	1.35	1.70
24 plus diesel, per bbl.	1.45	1.70
24 plus diesel (bunkers)	1.55	1.70
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.85	1.00
12-17 (tankcars)	.80	1.00
10-17 (high sulfur)	.65	.90
San Joaquin Valley:		
10-18 (tankcars)	.60	.85
24 plus diesel, per bbl.	1.40	1.70
San Francisco:		
24 plus diesel, per bbl.	1.55	1.70
24 plus diesel (bunkers)	1.60	1.70
10-16 (bunkers)	1.00	1.05

GULF COAST—

28-30 gas oil	.04⅛	.04¼
28-30 diesel (bunkers)		1.90
Bunkers (bulk cargoes)		.85
Bunker C (bunkers)	.90	1.05

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.05
28-30 diesel (lighterage 6¼c per bbl.)		2.10
28-30 diesel (tankcars)		.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.25
Industrial fuel (tankcars)	.04½	.04¾

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.19
150-160 D, 0-10	.16
150-160 D, 15-25	.15
150-160 E, 15-25	.14½
100-110 D, 0-10	.14½
Steam refined:	
631 green (treated)	.13½
600 dark green (untreated)	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.18½	.19½
15 pour test	.17½	.18½
20 pour test	.16½	.17½
25 pour test	.15½	.16½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.12
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-3½	.13
400-3½	.14
100-2½ paraffin oil	.06
15-20 Cold Test:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
350-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.17½	.18
10 pour test	.16½	.17
15 pour test	.16	.16½
25 pour test	.15	.15⅞
180 vis. at 70° F., 3 color:		
25 pour test	.16	.16½
200 vis. at 70° F., 3 color:		
Zero pour test	.20½	.21
10 pour test	.19½	.20
15 pour test	.19	.19½
25 pour test	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale		.02⅝

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0255	.0260
124-126 (a.m.p.) w.c. scale	.0255	.0260

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0295	.0300
124-126 (a.m.p.) y.s.	.0265	.0280
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05	.05⅛
60-62 400	.05⅝	.05⅞
61-63 390		.05⅞
64-66 375		.05¾

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05½	.05¾
65-69 octane		.06
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.04⅞	.05
41-43 water white	.05	.05⅛
44 water white	.05⅝	.05½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.21½	.22
600 S. R. unfiltered	.16½	.17
630 S.R. unfiltered	.21	.21½
600 flash, S.R.	.21½	.22
630 flash, S.R.	.25½	.26
Bright Stocks:		
8 color	.23½	.24
6½ plus color in dilution	.23	.23½

NEUTRAL OIL

200-3 color	.30	.30½
150-3 color	.25½	.26

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude Scale:		
124-126 w.s.	.0295	.0300
124-126 y.s.	.0265	.0280

Exposition Visitors Assured of Housing

The newly appointed manager of the housing bureau of the tenth International Petroleum Exposition, Charles Andrews, receives an explanation of the housing situation from Earl Sneed, chairman of

the housing committee. Sneed points out that, although Tulsa has more hotel facilities for its size than any other city in the southwest, most of the major hotels are already filled with reservations for the exposition period, May 14 to 21. Andrews, a member of the housing committee and associate of the 1936 oil show, has been assured the cooperation of the apartment house owners and is making arrangements to have a Pullman city, which is to be air-conditioned and will have shower baths.

Gulf Coast Fields

(Continued from Page 70)

promise of being very active during the year, as several large drilling blocks are reported to have been taken.

In the Woodlawn area, Jefferson Davis Parish, Union Sulphur Co. has squeezed off perforations, preparatory to a third production test of No. 1 Calcasieu National Bank, which proved this structure productive several weeks ago when it flowed approximately 50 bbls. of distillate per day at 8,286 feet. The casing is to be reperforated at 8,286-88 feet in an attempt to increase its production.

Sale of Louisiana Lands

The State Mineral Board announced the past week that the leasing of state lands for oil exploration would be resumed immediately and bids for several hundred thousand acres is expected. Leasing of state lands was discontinued in May, 1937, in order that the state could obtain more information on its leases.

Continental Oil Co. is moving in material for an interesting wildcat on the Scott Prospect, Lafayette Parish. It is to be drilled on the Rita Foreman lease in the SW quarter of section 36-9s-3e, southeast of the Bosco field. Protection acreage is held by the Magnolia Petroleum Co.

Amerada Petroleum Corp. and Louisiana Land & Exploration Co. No. 1 South Coast Corp., the discovery well of the Raceland field, Lafourche Parish, flowed 733 bbls. of fluid in 24 hours, 2 per cent of which was wash water. The well is flowing through a quarter-inch choke with tubing pressure 1,500 pounds and casing pressure 1,875 pounds. Corrected gravity is 26.2 degrees. To the south, Gulf Oil Corp. No. 3 State, completed last week as the discovery well of the Timbalier field, is flowing 325 bbls. of oil daily. The salt water content which appeared in the initial test was apparently due to accumulation in the casing from previous tests, as the oil flow is now free of it.

COMPLETIONS—TEXAS COAST

Completions of the week with pay sand record or total depth and initial 24-hour production follow:

Brazoria County

Hastings field: Stanolind Oil & Gas Co. No. 4 Drake, 5,502 feet, 611 bbls., quarter-inch choke. E. M. Hailey No. 1 Blumer, sand 6,036-79 feet, 605 bbls., quarter-inch choke. H. A. Potter No. 1 Blumer, oil sand 6,076-96 feet, 585 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 9 South Texas Grain Co., oil sand 6,102-07 feet, 112 bbls., one-eighth inch choke.

Liberty County

Hankamer field: Olsen Oil Co. No. 1-B Ezzell, 2,613 feet, 107 bbls., quarter-inch choke,

Newton County

Call field: Houston Oil Co.-Republic Production Co No. 3 Peavy Moore Lumber Co., 7,366 feet, abandoned.

Harris County

Friendswood field: Humble Oil & Refining Co. No. 2 E. A. Gray, sand 6,038-63 feet, 578 bbls., quarter-inch choke. Tomball field: Amerada-Stanolind Oil & Gas Co. No. 1 H. M. Bell, 2,367 feet, well blew out, abandoned.

Orange County

Orange field: Glenn H. McCarthy No. 2 Brown Estate, 6,756 feet, abatndoned.

Wharton County

Withers field: Texas Co. No. 5 A. C. Thompson, 5,551 feet, 282 bbls., 12/64-inch choke.

Louisiana-Arkansas Fields

(Continued from Page 62)

week in salt water at a total depth of 7,155 feet. The test is in the extreme southern part of Red River Parish, southeast of the Bull Bayou field.

Wildcats Revived

Two important wildcats are resuming operations in North Louisiana. In Morehouse Parish, W. J. Furlong No. 1 E. M. Clark, section 10-20-7e, is setting casing at a total depth of 6,025 feet and will be deepened to the Big lime. The test was shut down several days ago at contract depth, but financing by four major oil companies interested in the area will carry it deeper.

In Union Parish, Joe Modesett is moving in a heavy rotary to deepen No. 1 Frost Lumber Co. in the Farmersville area.

Shuler, Arkansas

Two completions in the Shuler field, in Union County, Arkansas, were held up by the first trouble which has been encountered in the Jones sand from the presence of a gas cap. Phillips Petroleum Co. No. 2 Justiss and No. 2 Marks, located on the northwest edge of the field, were perforated too high, and operators will have to squeeze and reperforate. The two wells are the highest structurally in the field to date, proving that the top of the structure has not been reached, and also that the Jones sand has a gas cap up structure, which does not become apparent along the flank heretofore developed.

Buckner Tests

In addition to the two tests drilling in the vicinity of the newly opened Buckner field, Standard Oil Co. of Louisiana is rigging up a third, No. 1 Crone, in section 8-16-22. The test is northeast of the Standard's discovery well.

Southwest Texas Fields

(Continued from Page 64)

Hunter, 4,418 feet, perforated casing 4,401-06 feet, 142 bbls., three-sixteenths inch choke; Richardson Petroleum Co. No. 23 Cain, 4,864 feet, 125 bbls., jetting with gas; Ben F. Smith No. 1 Walton, 4,141 feet, abandoned.

McMullen County

Callihan field: Marion Production Co. No. 1 Lark, 1,056 feet, 15 bbls., pumping.

Refugio County

Tomoconnor field: Quintana Petroleum Co. No. 14 Heard, 5,925 feet, perforated casing 5,826-34 feet, 143 bbls., three-eighths inch choke.

Starr County

Samfordyce field: R. E. Fair No. 1-B Pena, 2,984 feet, 218 bbls., five-eighths inch choke.

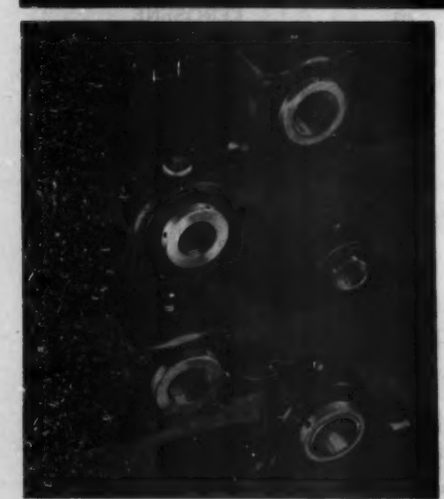
Webb County

Killam field: O. W. Killam No. 33 Garcia, 2,002 feet, 40 bbls., 4 per cent salt water, pumping. Oilton field: Cox & Hamon No. 1 Long, 2,002 feet, gas well; Killam & Campbell No. 2 Thompson, 1,932 feet, 250 bbls., pumping; Lewis H. Jones No. 1 Pena, 1,935 feet, 180 bbls., pumping; Killam & Campbell No. 1 E. M. Thompson, 1,935 feet, gas well; J. R. B. Moore No. 4 Martin, 1,891 feet, 105 bbls., pumping; Mountain Townsite Oil Co. No. 3 fee, 1,903 feet, 125 bbls., pumping.

Victoria County

Heyser field: Sun Oil Co. No. 5 Coffey, 5,745-48 feet, 82 bbls. in 15 hours, one-eighth inch choke; Gulf Oil Corp. No. 2-B Traylor, 6,033-36 feet, 113 bbls. in 12 hours, one-eighth inch choke.

LINK-BELT *Anti-friction* BEARINGS



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Anti-friction . . . inherent self-alignment . . . streamlined . . . the ideal combination for lower power consumption—longer service life—less lubrication—minimum maintenance expense. Anti-friction bearings in Link-Belt streamlined mountings. Send for General Catalog No. 700.

LINK-BELT COMPANY

2410 W. 18th St., Chicago, Philadelphia, Indianapolis, New York, Dallas, Houston, Los Angeles, Tulsa

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Feb. 5 Sales	Week ending Feb. 5 High	Week ending Feb. 5 Low	Week ending Feb. 5 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1937 High	1937 Low	1936 High	1936 Low
68½	57	1,200	62	57	62	Amerada Corp.	788,675	N.P.	50cQ	3-31-38	$2.00	114⅞	51½	125½	75
22¼	20	6,200	21⅜	20¼	21⅛	Atlantic Refining	2,664,000	$25	25cQ	3-15-38	1.25	37	18	35⅛	26⅝
18	14⅛	2,600	15¾	14⅝	15¾	Barber Co.	387,149	$10	75c	12-16-37	.50	43⅜	10⅛	38½	21
16⅛	13	6,300	14½	13⅛	13⅝	Barnsdall Oil Co.	2,247,974	$5	25cQ	2-1-38	.80	35¼	10	28¼	14⅛
10½	8½	22,600	9¼	8½	8⅝	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	2-15-38	.80	17⅞	7	17¼	11½
34⅝	27⅝	15,100	29⅜	27½	28¾	Continental Oil of Delaware	4,682,615	$5	25cQ	3-31-38	1.50	49	24	44⅞	28⅛
8⅞	6¼	9,100	7⅛	6½	6⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅝
22⅝	17⅛	4,600	18½	17⅛	18	Mid-Continent Petroleum	1,855,912	$10	$1	11-1-37	1.15	35⅝	14	30⅞	17¼
17¾	14	1,400	14⅝	14	14¼	Mission Corporation	1,399,345	N.P.	25c	12-24-37	.45	34	15	29⅞	16⅝
22½	14¼	14,200	17⅝	14¼	16	National Supply	382,591	$25	$2 pf.‡	12-22-37	....	41⅜	17⅝	75½	19⅞
14⅞	11⅞	11,600	13	11⅝	13	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	.60	22⅞	9	18	12⅛
15⅞	11¾	600	12⅛	11¾	11¾	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	29¾	11¾	23½	11⅝
8⅝	8	200	8	8	8	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	.60*	17⅛	7	20⅝	12¼
42½	34⅛	17,300	38¼	34⅛	36⅝	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-38	2.50	64	30⅛	52⅜	38⅛
19¼	16¼	2,400	17	16¼	16⅝	Plymouth Oil Co.	1,050,000	$5	35cQ	9-30-37	.90	29⅞	13	27⅝	11⅞
13½	10¼	23,800	11⅝	10¼	11	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	....	24⅜	8⅝	24⅞	16
7⅞	5⅝	6,600	6⅝	6	6⅜	Richfield Oil Corp.	3,986,638	N.P.	25c	12-24-37	....	6½	4⅛	..	..
25⅝	20	3,900	22¼	20¼	21⅜	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	9-15-37	1.00	54⅛	16	44	30½
18¼	15⅛	3,900	16⅝	15	15¼	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	.25	34¾	14⅞	28¼	14⅜
34⅜	24⅛	3,500	26⅞	24⅛	25	Skelly Oil	1,006,348	$15	50c	9-30-37	....	60⅝	26½	47⅜	19½
16⅜	13⅜	28,500	15¼	14⅛	15	Socony-Vacuum	31,151,071	$15	30c	12-15-37	.70	23¼	13	17½	12½
33⅞	28⅝	12,400	30⅞	29¼	30⅜	Standard Oil of California	13,014,754	N.P.	35cQ†	3-15-38	1.20	50	27⅛	47⅝	35
35½	31⅞	7,200	33	31⅞	32¼	Standard Oil (Indiana)	15,196,241	$25	25cQ	3-15-38	2.40	50	26½	48½	32¾
34	34	No sales	..	..	..	Standard Oil of Kansas	134,841	$10	$5	12-20-37	1.00	43	30⅝	31	25
51⅜	44½	20,900	49	46	48⅛	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.00	76	42	70⅜	51⅛
57⅞	49¾	1,500	51¼	49½	50	Sun Oil	2,156,825	N.P.	25cQ	3-15-38	$1 & 6% Stk.	77½	44½	91	70
3⅜	2½	4,900	2¾	2½	2⅝	Superior Oil Corp.	1,388,079	$1	....	.....	....	7¾	1½	6¾	3
44⅞	37¼	20,800	40¼	37½	39⅜	Texas Corp.	10,896,858	$25	50cQ	1-2-38	1.50	65⅛	34¾	55¼	28⅞
4⅞	3⅝	3,600	3⅞	3⅝	3⅞	Texas Gulf Producing Co.	888,134	N.P.	10c	12-23-37	.05	9⅝	2	8⅞	4⅜
9½	7⅜	8,000	8⅝	7⅞	8⅜	Texas Pacific Coal & Oil	888,237	$10	10c	3-1-38	.25	16⅝	5⅜	15¼	7½
15½	13⅛	6,300	14½	13⅜	13⅝	Tide Water Associated	6,288,512	N.P.	25cQ	3-1-38	.70	21⅝	13½	21⅜	14⅜
21¼	18½	3,900	19⅞	19⅛	19⅞	Union Oil of California	4,386,070	$25	30cQ	2-10-38	1.00	28¼	17½	28½	20⅜
23½	22	300	22½	22	22	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-38	1.20	31½	22	31⅝	22⅝
2⅝	2¼	300	2⅝	2¼	2¼	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	6¼	1¾	5¼	2⅜

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Feb. 5 Sales	Week ending Feb. 5 High	Week ending Feb. 5 Low	Week ending Feb. 5 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1937 High	1937 Low	1936 High	1936 Low
9⅜	7¼	1,600	8¼	7¼	8¼	American Republics Corp.	1,308,049	$10	30c	12-27-37	....	10	6⅝	..	..
10¼	8¼	1,100	8⅞	8¼	8⅞	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$1.00	21⅜	7	21	13¼
39	35	No sales	..	..	..	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-38	3.25	51½	36	50	39¾
104	100	100	104	104	104	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-30-37	7.00	123	95½	124¾	105
2	1⅝	21,200	1⅞	1⅝	1⅝	Cities Service	37,804,394	N.P.	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	1½	100	1⅝	1⅝	1⅝	Cosden Petroleum	399,687	$1	.....	.....	....	5½	1½	4½	1½
27½	22½	8,700	23¾	22½	23⅜	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	.50	38¾	20¼	39	19⅞
8¾	7	800	7¼	7	7	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅝	6½	18⅛	9
3½	2½	1,900	2⅞	2½	2¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	31	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	2-1-38	4.00	47½	24½	47½	38½
41¾	37	4,000	38¼	37	38¼	Gulf Oil Corp.	9,076,202	$25	25cQ	12-1-37	1.50, 100% Stk.	63½	33	59	36
66½	60	3,400	62⅝	60½	61	Humble Oil & Refining	8,923,935	N.P.	62½cQ	12-27-37	1.50	87	54⅞	80	57
18⅞	17⅜	2,000	18⅛	18	18⅛	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24¼	14½	24½	19¾
7¾	6⅝	200	6¾	6¾	6¾	Indiana Pipe Line	300,000	$10	50cSA	11-15-37	.80	15	5⅞	9¾	5½
30⅝	28½	2,900	30	29⅝	30	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39½	23½	39⅝	32⅝
4¼	3¼	800	3¾	3½	3¾	Kirby Petroleum Co.	500,000	$1	10c	9-15-37	.20	8¾	2⅜	5¾	2⅝
25⅛	18¾	4,300	21¼	19¼	20¾	Lion Oil Refining	270,000	N.P.	50cQ†	12-24-37	.75	34	12½	17¾	7⅜
9¼	7⅛	3,500	8⅛	7¾	7¾	Lone Star Gas	5,382,723	N.P.	20c	12-22-37	.60	14¼	5¼	14¼	9⅞
9⅜	8⅛	6,000	8¾	8⅛	8½	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15¼	6¾	15⅜	9⅞
7⅝	7	800	7¼	7	7¼	Midwest Oil Co.	998,444	$10	50c	12-15-37	....	14⅝	6¼	..	..
5¼	4⅝	1,600	5¼	5	5¼	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	7⅞	4⅛	8⅜	5
14⅝	13	800	13½	13⅛	13¼	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-38	1.00	19½	12	23	17⅜
9¼	7¾	200	7¾	7¾	7¾	National Transit	509,000	$12.50	55cSA	12-15-37	.75	12½	7¼	15¾	9¼
2⅝	1⅝	No sales	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	5	1⅛	6⅝	1⅝
4½	4	100	4	4	4	New York Transit	100,000	$5	60c Spl.	12-28-37	.35	5⅜	3⅞	6¼	4¼
..	..	100	6	6	6	Northern Pipe Line	120,000	$10	25cSA	12-1-37	.40	12¾	5¾	9¾	4⅞
7	5⅜	16,100	5⅞	5⅜	5¾	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2¾	10⅛	3¼
3½	3	900	3⅜	3⅛	3⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	.50	13¾	2	19¼	4⅛
4	3⅛	100	3½	3½	3½	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅝	4⅜	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.25	7¼	3⅞	7⅞	3¼
38½	37¼	600	38	37¼	38	South Penn Oil	1,000,000	$25	$1.15Q†	12-28-37	2.60	56	35	44	32½
22	22	No sales	..	..	..	Southwest Penna. Pine Lines	35,000	$50	50cQ	12-31-37	13.00	42	20	60	44
18	17	1,500	17½	17⅛	17½	Standard Oil of Kentucky	2,604,790	$10	40cQ†	9-15-37	1.35	21⅛	14¾	23⅜	17⅛
7½	7¼	No sales	..	..	..	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	19	900	19½	19¼	19¼	Standard Oil of Ohio	753,740	$25	75cQ†	12-15-37	2.00	45	16	40	21¾
3¼	2⅞	8,000	3⅛	2⅞	3⅛	Sunray Oil	1,910,119	$1	10c	12-24-37	.10	4⅞	2	5	2⅝
4⅜	4	1,600	4⅜	4	4⅛	Texon Oil & Land	336,028	$2	15cQ	1-3-38	.60	7⅝	2	9¾	5⅜
5¼	3½	15,500	4	3⅝	3⅞	United Gas Corp.	7,818,959	$1	10c	9-15-37	.20	13⅝	3	10¾	4

†Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

New or Improved Equipment

Victor "Gas-o-Dome" Regulator Is Valuable in Laboratory

For oil refinery laboratories or wherever smaller volumes of extremely high-delivery pressures are necessary, the new Victor "Gas-o-Dome" regulator introduced by Victor Equipment Co.,

844 Folsom Street, San Francisco, Calif., should be of interest. This regulator is designed for working pressure ranges up to 5,000 pounds per square inch and for primary pressures exceeding 5,500 pounds per square inch. The device can be furnished for remote-control operation. The regulator illustrated is of the type which uses the primary pressure for delivery-pressure control. Another one is produced utilizing a separate source of high-pressure gas (such as nitrogen) to actuate the diaphragm, and this model can therefore be used for remote control.

The delivery-pressure adjustments are said to be absolutely accurate over the entire pressure range and within fractions of a pound. The diaphragm arrangement is full-floating between equalized gas pressures. The elimination of springs and the even distribution of the loading pressure result in improved delivery-pressure accuracy and maintenance.

The regulator illustrated shows the duplex valve arrangement for loading or unloading diaphragm pressures. The working mechanism is simple and sturdy to meet severe operating requirements.

Here and There With Men Who Manufacture Equipment

A talking moving picture depicting in detail the processes of drawing high carbon rope wire and fabricating wire rope, as produced by the Union Wire Rope Corp., of Kansas City, Mo., is available for presentation before groups in the oil, building, mining, and other industries in which wire rope is extensively used.

Allis-Chalmers Manufacturing Co.'s publicity department for power, electrical and industrial machinery now has two sections. George Callos has been appointed assistant manager in charge of sales promotion. A. K. Birch has been appointed assistant manager in charge of market analysis and sales organization.

E. R. Smith, district manager for Lane-Wells Co. in Houston, Tex., has been transferred to the Los Angeles headquarters and assigned to the development of the company's service in foreign fields. M. E. Montrose, district manager in Oklahoma City, has been made division manager in Houston. R. B. McCullar, assistant district manager in Oklahoma City, has been named division manager. Bruce Barkis, Los Angeles, becomes manager of sales development. Norman Dorn has been named chief engineer.

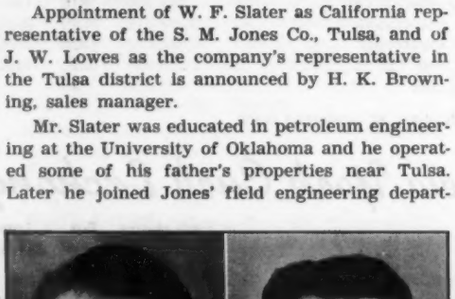
A. O. Smith Corp., Milwaukee, Wis., has opened a district office in the Gulf Building, Pittsburgh, Pa., in charge of R. L. Howes. During the past three years Mr. Howes was eastern manager of diesel engine sales for the Worthington Pump & Machinery Corp.

The Mid-Continent Supply Co., with general offices in the Mid-Continent Building, Fort Worth, Tex., has opened a new store in Wichita Falls, Tex., under the supervision of O. B. Albritton, district manager. The personnel includes J. E. Snoddy and J. E. Everroad, sales engineer; W. E. Staples, diesel service engineer, and R. M. Flippo, field salesman. The company has district offices in the City National Bank Building, Wichita Falls.

Members of Jones Sales Staff Assigned to New Districts

Appointment of W. F. Slater as California representative of the S. M. Jones Co., Tulsa, and of J. W. Lowes as the company's representative in the Tulsa district is announced by H. K. Browning, sales manager.

Mr. Slater was educated in petroleum engineering at the University of Oklahoma and he operated some of his father's properties near Tulsa. Later he joined Jones' field engineering depart-



J. W. Lowes *W. F. Slater*

ment and in 1936 he was appointed Tulsa district representative. His work has given him wide experience in problems affecting sucker-rods including such fields as Oklahoma City, Rodessa, Gulf Coast, West Texas and Kansas. In California Mr. Slater will work in close cooperation with Hillman-Kelley Co., agent for Jones products.

Mr. Lowes, a graduate of Carnegie Institute of Technology, has been attached to the field engineering department of the Jones company and more recently western Kansas district representative. His Kansas experience added practical knowledge of field problems to his previous technical training, in line with the policy of the company to help producers get the best results from Jones products. Mr. Lowes' activities will be under the direction of Holt McWorkman, division manager.

Perfection Gatevalve Designed for Foolproof Operation

The MacClatchie Perfection gatevalve is designed to give long foolproof operation at low maintenance cost. A gatevalve consists essentially of two major parts, the traveling member, which opens and closes the passage, and the body. The MacClatchie Perfection valve is built on a new principle, the sliding member being split vertically, to form two parts. In opening and closing the valve there is ample clearance between sliding member and body to allow free frictionless operation. At the bottom and top of the stroke, however, built-in pawls cause the two valve segments to expand against the walls of the valve, automatically sealing off the clearance space so dirt, sediment, and scale cannot enter, to clog the mechanism and prevent proper operation.

In the open position there is a full-sized opening through the valve. This feature means not only unrestricted fluid flow, but also longer valve life owing to elimination of the jetting action, which causes rapid wear through increased abrasion, especially when sand is present.

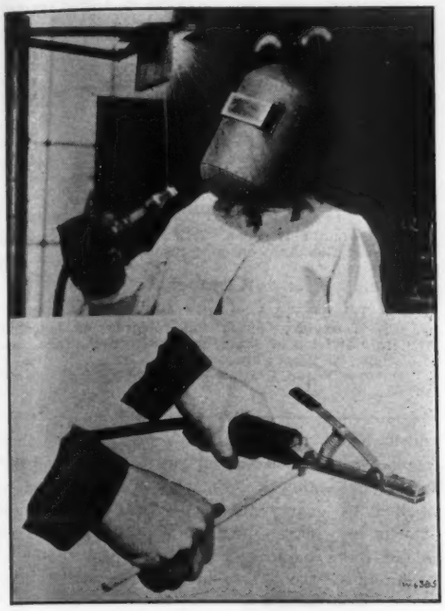
The valve is self-lubricated, containing space for sufficient grease to lubricate it throughout its life, assuring friction-free operation and protection of the valve mechanism from wear and corrosion. Packing has been scientifically placed to give proper sealing, and to stop all leakage when opening or shutting the valve. In the open position there is no fluid restriction, so that the fluid does not increase in velocity as it goes through the valve. The valve is made in 750-, 1,500- and 3,000-pound pressure models in a wide variety of sizes.

Harry Horton Now in Tulsa

Harry S. Horton, in charge of sales and engineering for the Dehydro Co. has been transferred from Oklahoma City to the company's general office in Tulsa. Associated with Howard L. Berkey, manager of the Dehydro Co. for more than 10 years in the crude oil treating business, Mr. Horton's work has taken him into practically all the oil-producing states. Through active membership in the A.P.I. and numerous field trips, which have covered the area from Michigan to Louisiana and from West Texas into the Rocky Mountain division, he has gained a host of friends in the oil industry. Recently Dehydro became associated with the Tretolite Co.

Electrode-Holder Weighing 14 Ounces Offered by Lincoln

A new arc-welding electrode-holder, the chief feature of which is remarkably light weight for the capacity, is announced by the Lincoln Electric Co., Cleveland, Ohio. The type ST weighs only 14 ounces and has a current capacity of 250 amperes continuous, equaling that of many holders weighing 25 ounces or more. The light weight, obtained without sacrifice of capacity, is attributed to use of formed steel parts, electrically welded.



Other features include the simple type of connection, to assure positive contact and eliminate loose connections, a cause of overheating in holders. Permanence of connections is attained through having all contacts electrically welded. Connection to cable is provided by an easily operated clamp, which locks the cable to the electrode-holder. The clamp can be tightened or loosened without tools by inserting a welding electrode through the hole in the square head of the clamp-capscrew and applying leverage. When tightened, this clamp maintains positive contact with the flat-braided flexible copper strip which carries current to the jaws. The result is a complete copper low-resistant circuit direct from the welding machine through the holder to the electrode.

Other important features are reduced overall width, permitting easier welding in confined places; rounded corners at important points to lessen the likelihood of contacting the holder and causing arcing; heavier copper jaws to assure maximum conductivity and prevent sticking of the electrode to the holder; grooving of the jaws for vertical and overhead as well as flat welding; a hollow fibre handle, correctly proportioned to fit the user's hand; fully insulated thumb lever and nongroundable sturdy spring.

Bulletins, Booklets and Other Literature for the Trade

The "Riggers' Handbook," a volume of 60 pages prepared by Broderick & Bascom Rope Co., 4203 North Union Boulevard, St. Louis, Mo., discusses Yellow Strand wire rope slings and fittings, with valuable information on socketing and splicing.

The new catalog 617 of Diamond Chain & Manufacturing Co., Indianapolis, Ind., contains 96 pages of information on the use of roller chains for motor drives, machinery and conveyor applications. The engineering section includes tables, formulas, selection and installation information, much of which has never before been available.

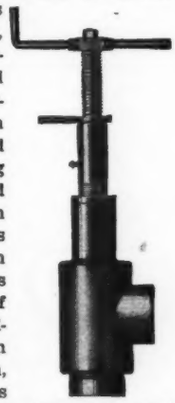
Gasoline storage tanks equipped with Wiggins pontoon roofs are pictured in the January issue of the Water Tower, bimonthly publication of Chicago Bridge & Iron Co., Chicago.

A bulletin describing a liquid-cooler with a wide range of applications has just been published by Griscom-Russell Co., 285 Madison Avenue, New York. This unit is the G-R Multiwhirl for cooling lubricating oil from turbines and diesel engines, jacket-water from diesel engines, transformer oil, etc.

Adding interest to the latest issue of the Wheatley Pumper, published by Wheatley Brothers Pump and Valve Manufacturers, Tulsa, are tables of weights and measures, postal rates and a history of the American flag.

Greater Efficiency and Safety With New Manifold Valve

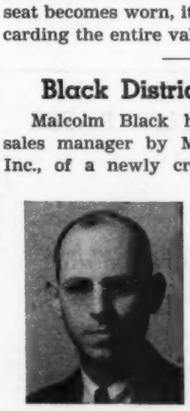
A new pump manifold valve designed and manufactured by American Iron & Machine Works Co., Oklahoma City, Okla., affords increased efficiency and safety, according to the manufacturers. The valve is to be installed next to or as near the air-chamber as possible. It has an easy-opening, fast-threaded screw to allow quick opening and closing, and is constructed with a lock-nut so that it can be locked when the valve is closed, open or at any position desired. This feature allows the circulation and mixing of mud at the same time. A ball-bearing swivel joint is used in the center of the control-stem, so that the valve itself does not turn and cause friction against gritty fluid when seating.



Also the valve is packed so that the stem is sealed automatically when open, and it is so constructed that the inner stem gland may be repacked under pressure in the open position. It can be repaired without removing from the line. If the steel seat becomes worn, it can be replaced without discarding the entire valve, the manufacturers say.

Black District Sales Manager

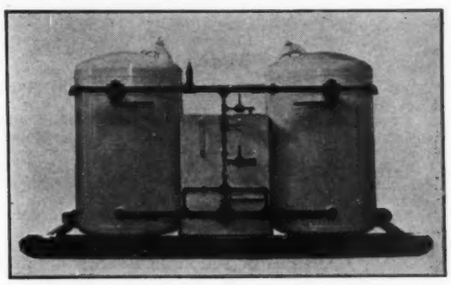
Malcolm Black has been appointed district sales manager by Manning, Maxwell & Moore, Inc., of a newly created south central district with headquarters in the Mayo Building, Tulsa. Mr. Black, who has represented this company as sales engineer in the Tulsa territory for several years, was formerly connected with O. G. & E. Co. in Enid, Okla., and the Continental Oil Co. in Ponca City, Okla. His background includes years of experience in refining, natural-gasoline and electrical-power plant operation and the problems of these and allied industries.



Manning, Maxwell & Moore, Inc., with general sales offices in Bridgeport, Conn., is known throughout the Mid-Continent and Gulf Coast areas as manufacturer of Consolidated safety and relief valves, American Schaeffer & Budenberg instruments, Ashcroft American pressure gauges and Hancock globe and angle valves. The company was established in 1851.

No Baffle-Plates Are Used in Redesigned Water-Softener

A redesigned portable water-softener, manufactured by Pyramid Manufacturing Co., 1114 Wood Street, Houston, Tex., incorporates features designed to assure efficiency in operation. The internal construction eliminates baffle-plates and uses instead a slotted brass lateral which rests on a bed of supporting gravel. Such a distributing system does not break, rust, or clog. The same thing is true of the lateral system in the brine-line. The old-type valve nest has been reduced from a system of 14 valves to an operating system of 6 valves and 1 bypass valve. All valves are high-pressure, lubricated, plug-type valves, the operating valves being 3-way, 2-port valves. An automatic pressure-relief valve safeguards against excessive pressure.



The machines are built to operate between the boiler feed pump and the boiler. They are designed so that low-pressure drilling-water can be used for flushing and introducing the brine, thus preventing any need of adjusting boiler feed pumps during regeneration operations. One of the fundamental points in zeolite softening is the material used. The processed zeolite is fused at high temperature. This means that it is so very hard and nonporous that it will stand the roughest usage without disintegrating or becoming clogged with dirt. Introduction of the brine, washing out the dirt and washing of the brine are accomplished in one operation.

H. W. DeYarmett Heads Branch

H. W. DeYarmett is manager of a branch office opened in the Second National Bank Building, Houston, Tex., by Petroleum Engineering, Inc., of Tulsa. Mr. DeYarmett has been with the company three years and is well acquainted with the design and operation of gasoline plants, vapor recovery plants, stabilizing units, etc. Before going to Petroleum Engineering, he had engineering and operating experience with the Gregg-Tex Gasoline Corp. in Longview, Tex., and the Chalmette Petroleum Corp. in New Orleans, La., thus becoming familiar with the problems confronting producers and refiners in the field in which Petroleum Engineering has specialized. Paul M. Raigorodsky is general manager of the company.

Hercules Opens Oil-Field Branch

As the initial step in a program of sales and service expansion in the Mid-Continent field, Hercules Motors Corp., Canton, Ohio, has opened a branch store in Kilgore, Tex. The new store will carry a complete stock of engines, power units and replacement parts for the entire Hercules line which embraces a wide variety of gasoline and diesel engines and power units. Other stores will be opened at strategic points. All Mid-Continent activities will be under the direction of A. B. Wehling, whose headquarters will be in Houston, Tex.

Oil Man's Calendar

February

14-15—Wichita, Kans., Kansas Oil Men's Association, twenty-fourth annual convention, Hotel Broadview.

14-18—New York, American Institute of Mining and Metallurgical Engineers, annual meeting, Engineering Societies Building.

15—Kilgore, Tex., East Texas Chapter A.P.I., at High School Auditorium.

16-17—Peoria, Ill., Illinois Petroleum Marketers Association, annual convention, Pere Marquette Hotel.

17-18—Amarillo, Tex., American Petroleum Institute. Division of Production, spring meeting, Herring Hotel.

22-24—Milwaukee, Wis., Wisconsin Petroleum Association, Schroeder Hotel.

22-24—Columbus, Ohio, Ohio Petroleum Marketers Association, fifteenth annual convention and marketing exposition, Deshler-Wallick Hotel.

March

2-3—Indianapolis, Ind., Indiana Independent Petroleum Association, spring meeting.

2-4—Des Moines, Iowa, Iowa Independent Oil Jobbers Association and Trade Exhibit, Fort Des Moines Hotel.

7—Rochester, N. Y., American Society for Testing Materials, Spring Regional Meeting and Group Committee Meetings.

14-16—Toronto, Ontario, annual meeting of Canadian Institute of Mining and Metallurgy.

16-18—New Orleans, twenty-third annual meeting, American Association of Petroleum Geologists, Roosevelt Hotel.

21-22—Oklahoma City, Oklahoma Utilities Association.

21-22—St. Louis, Mo., Liquefied Petroleum Gas Association, annual meeting.

21-25—Los Angeles, Calif., American Society for Metals congress and exposition, Pan-Pacific Auditorium.

23-25—Los Angeles, Calif., American Society of Mechanical Engineers.

24-25—Fort Worth, Tex., American Petroleum Institute, Division of Production, spring meeting, southwestern district, Blackstone Hotel.

April

4-6—Cincinnati, Ohio, A.G.A. Distribution Conference, Netherland Plaza.

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

14-15—Pittsburgh, Pa., Eastern District A.P.I. Division of Production, William Penn Hotel.

17-21—Dallas, Tex., American Chemical Society.

19—Los Angeles, Spring meeting, Pacific Coast district, A.P.I. Division of Production, Biltmore Hotel.

19-21—Norman, Okla., Gas Measurement Short Course.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

25-27—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting.

May

11-13—Tulsa, Natural Gasoline Association, Hotel Tulsa.

12-14—Tulsa, National Oil Scouts Association of America.

14-21—Tulsa, International Petroleum Exposition.

23-25—Wichita, Kans., American Petroleum Institute, eighth midyear meeting.

(?)—New Orleans, La., American Gas Association, Natural Gas Department.

June

6—Houston, Tex., Oil Workers International Union.

16-18—Pittsburgh, Pa., Pennsylvania Grade Crude Oil Association.

20-24—St. Louis, Mo., American Society of Mechanical Engineers.

June-July

27-1—Atlantic City, N. J., annual meeting of American Society for Testing Materials.

August-September

31-3—Spokane, Wash., Pacific Coast meeting of American Institute of Electrical Engineers.

September

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

October

——Tulsa, I.P.A.A., annual convention.

6-8—Knoxville, Tenn., fall meeting of industrial minerals division of American Institute of Mining and Metallurgical Engineers.

10-14—Chicago, National Safety Congress, Stevens Hotel.

New York Market

(Continued from Page 103)

000,000 bbls. can be held to a reasonable rate of increase for the duration of the winter, and that they can be worked off in stride, if the recession terminates in the spring, as many predict.

Automobile manufacturers took action in Detroit last week which may help in leveling off the winter decline in gasoline consumption next year. The members of the Automobile Manufacturers Association decided at Detroit to delay the introduction of new models at the New York Automobile Show until November 11, 1938. The action was taken to shorten the period during which dealers are compelled to carry over burdensome stocks of used cars accepted as trade-ins on new models. By holding the automobile show in October the past two years, the shock of absorbing thousands of used cars has been too great for dealers who are compelled to carry them in stock for the most part until the following spring months of April and May. Later introduction of new car models may have a tendency to stimulate buying.

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Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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